

**SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH
COMPLIANCE ASSESSMENT**

TO: Karen G. J'Anthony, Environmental Program Manager I, SHWMB ^{KGA}
_{9/22/08}

FROM: Melissa A. Ferree, Engineer III, SHWMB ^{MAF} 9/19/08

DATE: September 15, 2008

SUBJECT: Compliance Assessment at Procino Plating FILE

REFERENCE: DED982362543, FILE CODE: 21

GENERATOR/TSD LOCATION ADDRESS: 901 South Market Street
Seaford, Delaware 19973

GENERATOR/TSD MAILING ADDRESS: 901 South Market Street
Seaford, Delaware 19973

SHWMB REPRESENTATIVES: Melissa A. Ferree, Nicole Hill, and
Crystal D'Andrea

SITE REPRESENTATIVE: Patrick Procino, President
Rita Procino, Administrator

DATE OF ASSESSMENT: August 20, 2008

PURPOSE OF ASSESSMENT: Follow-up Inspection (FUI) and Sampling

CURRENT FACILITY STATUS: LQG

NOTIFIED FACILITY STATUS: LQG

PRE-ASSESSMENT SAFETY PREPARATION:

Prior to the site visit, hazardous waste manifests were reviewed. On the basis of the manifest review, it was determined that the facility was a LQG.

It was determined that the safety equipment of hard hats, steel toed boots and safety glasses would be adequate under normal operating conditions at the site.

FACILITY DESCRIPTION/SITE OBSERVATIONS:

At the request of EPA Region III, SHWMB representatives performed a follow-up compliance assessment and sampling at Procino Plating. EPA Region III had previously conducted a compliance assessment on December 13, 2007 and a follow-up compliance assessment on February 5, 2008. The SHWMB had also conducted a follow-up compliance assessment on July 1, 2008.

SHWMB representatives observed four – 55 gallon drums containing brass cyanide plating bath solution. Mr. Procino stated during previous compliance assessments that these solutions were removed from the brass plating bath tank. Spent cyanide plating bath solutions from electroplating operations are considered a listed hazardous waste carrying the waste code F007. One drum was labeled “cyanide to be treated” (Photograph #1). Another was labeled “No good – to be treated.” None of these containers were labeled with the words “Hazardous Waste” or marked with an accumulation start date.

This is a violation of Delaware’s *Regulations Governing Hazardous Waste* §262.34(a)(3), which states:

“...a generator may accumulate hazardous waste on-site for 90 days or less without a permit...provided that:...While being accumulated on-site, each container and tank is labeled or clearly marked with the words ‘Hazardous Waste.’”

This is also a violation of Delaware’s *Regulations Governing Hazardous Waste* §262.34(a)(2), which states:

“...a generator may accumulate hazardous waste on-site for 90 days or less without a permit...provided that:...The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.”

SHWMB representatives observed four – 55 gallon drums containing tin cyanide plating solution. During the February 5, 2008 follow-up compliance assessment, Mr. Procino stated that these drums should have been taken by Fin-Tec on January 9, 2008, as Procino Plating has no use for them. It is clear that Fin-Tec does not want these drums (since they didn’t take them on January 9, 2008 and the containers have remained at Procino Plating for eight months). Procino Plating has no use for them as Mr. Procino stated they have removed their barrel plating line and no longer have a need for this solution. Thus, it is the conclusion of the SHWMB that these drums contain a waste. Spent cyanide plating bath solutions from electroplating operations are considered a listed hazardous waste carrying the waste code F007. None of the drums were labeled with the words “Hazardous Waste” or marked with an accumulation start date. This is a violation of Delaware’s *Regulations Governing Hazardous Waste* §262.34(a)(3), which states:

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By failing to meet the conditions of the exclusion for 90 day or less storage under DRGHW §262.34(a) as described above, Procino Plating is operating a hazardous waste storage facility without first obtaining a permit. By not obtaining a permit, Procino Plating is in violation of DRGHW §122.1(c), which states in part:

"DNREC requires a permit for the 'treatment', 'storage', and 'disposal' of any 'hazardous waste' as identified or listed in Part 261."

In addition to the drums of tin plating bath solution not being labeled or dated, at the time of the assessment, these drums had been accumulated on-site for at least 196 days (as they were observed by SHWMB and EPA representatives on February 5, 2008 and again by SHWMB representatives on July 1, 2008 and August 20, 2008). This is a violation of DRGHW §122.1(c), which states:

"DNREC requires a permit for the 'treatment', 'storage', and 'disposal' of any 'hazardous waste' as identified or listed in Part 261."

The multiple containers documented in each previous inspection report were still being accumulated on-site. Previously, Mr. Procino had said these containers needed to be "gone through" to determine if the material was usable product or a waste. At the time of the August, 20, 2008 assessment, this had not been done. The SHWMB took an inventory of all containers being stored on-site and their location.

SHWMB representatives observed six – 55 gallon poly drums of hydrochloric acid and water (Containers 1, 17, 18, 19, 41, and 42 on the Container Log in Attachment 1). Mr. Procino stated during the February 5, 2008 follow-up compliance assessment and again on August 20, 2008 that this waste stream had a pH of approximately 1 and acknowledged that they were a hazardous waste. SHWMB representatives determined through the use of pH paper that the pH of Drum #17 was 1. SHWMB representatives proceeded to obtain samples of Drums 17, 18, 19, 41, and 42 to be analyzed for pH by the DNREC Environmental Laboratory Section (Attachment 2 and Photographs 36-45). The results are summarized in the table below:

Sample Number	Drum Number (from Container Log)	pH
PP1	17	0.70
PP2	18	0.41
PP3	19	0.33
PP4	42	0.86
PP5	41	0.20

None of these containers was labeled with the words "Hazardous Waste." This is a violation of Delaware's *Regulations Governing Hazardous Waste* (DRGHW) §262.34(a)(3), which states:

"...a generator may accumulate hazardous waste on-site for 90 days or less without a permit...provided that:...While being accumulated on-site, each container and tank is labeled or clearly marked with the words 'Hazardous Waste.'"

Four of the containers (Drums 1, 19, 41, and 42) were not marked with an accumulation start date. This is also a violation of DRGHW §262.34(a)(2), which states:

"...a generator may accumulate hazardous waste on-site for 90 days or less without a permit...provided that:...The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container."

Two of the containers (Drums 17 and 18) were incorrectly marked with an accumulation start date of July 9, 2008. These containers were observed by the SHWMB during the July 1, 2008 assessment. In addition, SHWMB representative Melissa Ferree spoke to Mr. Procino via telephone on July 7, 2008 and discussed the need to determine the accumulation start date and to label the containers with the appropriate start date. This is also a violation of DRGHW §262.34(a)(2), which states:

"...a generator may accumulate hazardous waste on-site for 90 days or less without a permit...provided that:...The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container."

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SHWMB and EPA representatives had discussed the need to immediately properly label containers of waste hydrochloric acid and water during the February 5, 2008 compliance assessment. SHWMB representative Melissa Ferree also spoke to Mr. Procino on the telephone on July 7, 2008. During this telephone conversation, Mr. Procino stated that he knew the wrong labels were placed on the drums and acknowledged that the drums should have be labeled with words "Hazardous Waste" and marked with an accumulation start date.

SHWMB representatives also observed 3 poly drums with the top cut off used to accumulate gold plating solution (one of which contained cyanide). A solid, similar to kitty litter, is added to solidify the material at some point before it is sent off-site for gold reclamation. One of these containers was lined with a trash bag and labeled with the word "Cyanide" (Photographs 16 and 17) and the other two were labeled "Gold Reclamation." The containers were closed during the August 20, 2008 follow-up assessment. Facility representatives stated that this material is shipped off-site to a recycler without a hazardous waste manifest. This is a violation of DRGHW §266.70(b), which states:

"Persons who generate, transport, or store recyclable materials that are regulated under this subpart are subject to the following requirements: ... (2) Subpart B of 262..."

DRGHW Part 262, Subpart B [specifically §262.20(a)] requires:

"A generator who transports, or offers for transportation, hazardous waste for offsite treatment, storage, or disposal must prepare a Manifest...according to the instructions included in the appendix to this part."

In addition, under the "Precious Metal Exemption" in §266.70, the facility must maintain records demonstrating the materials are not speculatively accumulated. The facility is unable to provide this documentation. This is a violation of DRGHW §266.70(c), which states:

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In addition, under the "Precious Metal Exemption" in §266.70, the facility must maintain records demonstrating the materials are not speculatively accumulated. The facility is unable to provide this documentation. This is a violation of DRGHW §266.70(c), which states:

"Persons who store recycled materials that are regulated under this subpart must keep the following records to document that they are not accumulating these materials speculatively (as defined in 261.1(c) of these regulations)

- (i) Records showing the volume of these materials stored at the beginning of the calendar year;*
- (ii) The amount of these materials generated or received during the calendar year; and*
- (iii) The amount of materials remaining at the end of the calendar year."*

On July 1, 2008, four newly generated drums of hydrochloric acid and water and one poly drum of solidified gold plating solution containing cyanide awaiting precious metals recovery were observed and the proximity of these containers of incompatible wastes was noted. It was also noted that there existed no dike, berm or wall between the drums.

During the August 20, 2008 follow-up assessment, the SHWMB observed two additional 55 gallon drums containing hydrochloric acid and water. In addition, the SHWMB observed four - 55 gallon drums of tin cyanide plating bath solution (cited above), four - 55 gallon drums of brass cyanide plating solution (cited above), five - 55 gallon drums of chrome (potentially containing cyanides), two - 220 gallon poly totes containing silver cyanides (labeled as hazardous waste), two - 220 gallon poly totes containing nickel plating bath (potentially containing cyanides), and one - 220 gallon poly tote containing sulfuric acid. Mr. Procino stated that these wastes were to be treated in the facility's waste water treatment unit.

These containers of waste are subject to the requirements of DRGHW Part 265, Subpart I. As stored, these drums violate §265.177(c) of Subpart I which states:

"A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

[Comment: The purpose of this is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.]"

Too, as a large quantity generator of hazardous waste, Procino Plating is subject to the requirements of DRGHW § 265.31 titled "Maintenance and operation of facility." The storage of these cyanide containing wastes in proximity to both hydrochloric acid and sulfuric acid violates the requirements of DRGHW §265.31 which states:

"Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment."

SHWMB representatives also observed a black liquid on the concrete floor beneath the wooden pallet holding Containers 72 through 85 (Row 3 on the attached drawing and Photographs 3 and 4). There were several extremely rusted containers on this pallet, including containers of Iridite, Entek CU-55, Econochrome, and several unknowns (see attached spreadsheet for details and Photographs 7 and 8). The liquid appeared to be leaking from a 10 gallon metal drum containing Iridite (Photographs 5 and 6). The facility has previously stated in its response to EPA's Information Request that this is a hazardous waste.

This is a violation of the DRGHW §265.173(b), which states:

"A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak."

At the time of the assessment, the waste had not been transferred to another container in good condition, which is a violation of the DRGHW §265.171, which states:

"If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the requirements of this part."

Since the container had a hole and was leaking, it was no longer closed, which is a violation of the DRGHW §265.173(a), which states:

"A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste."

FACILITY RECORD REVIEW:

At the time of the assessment, Mrs. Procino was able to provide an updated copy of the facility's contingency plan. She also stated that a copy had been submitted to EPA Region III for review to determine its completeness.

The contingency plan provided a list of employees, job titles, and job descriptions for each employee responsible for handling hazardous waste. Training records were identical to those reviewed during the July 1, 2008 compliance assessment, which were determined to be inadequate.

OBSERVED VIOLATIONS

August 20, 2008

VIOLATION CITATION	VIOLATION DESCRIPTION
DRGHW, §262.34(a)(3)	Failure to label hazardous waste container
DRGHW, §262.34(a)(2)	Failure to place accumulation start date on hazardous waste container
DRGHW, §122.1(c)	Failure to obtain a permit (storage over 90 days)
DRGHW, §262.20(a)	Failure to prepare a manifest for a shipment of hazardous waste
DRGHW, §266.70(c)	Failure to maintain speculative accumulation documentation (Precious Metal)
DRGHW, §265.177(c)	Failure to separate incompatible wastes
DRGHW, §265.31	Failure to maintain facility in a manner to prevent a release
DRGHW, §265.173(b)	Failure to handle container in a manner to prevent a leak
DRGHW, §265.171	Failure to transfer contents of a leaking container
DRGHW, §265.173(a)	Failure to maintain a closed container
DRGHW, §265.16(a)	Failure to provide training

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DRGHW, §265.177(c)	Failure to separate incompatible wastes
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DRGHW, §265.173(b)	Failure to handle container in a manner to prevent a leak
DRGHW, §265.171	Failure to transfer contents of a leaking container
DRGHW, §265.173(a)	Failure to maintain a closed container
DRGHW, §265.16(a)	Failure to provide training

OBSERVED VIOLATIONS

July 1, 2008

VIOLATION CITATION	VIOLATION DESCRIPTION
DRGHW, §262.34(a)(3)	Failure to label hazardous waste container
DRGHW, §262.34(a)(2)	Failure to place accumulation start date on hazardous waste container
DRGHW, §122.1(c)	Failure to obtain a permit (storage over 90 days)
DRGHW, §262.20(a)	Failure to prepare a manifest for a shipment of hazardous waste
DRGHW, §266.70(c)	Failure to maintain speculative accumulation documentation (Precious Metal)
DRGHW, §265.177(c)	Failure to separate incompatible wastes
DRGHW, §265.31	Failure to maintain facility in a manner to prevent a release
DRGHW, §265.53(a)	Failure to maintain a printed copy of contingency plan on-site
DRGHW, §265.53(b)	Failure to submit contingency plan to local authorities
DRGHW, §265.52(c)	Failure to include arrangements with local authorities in contingency plan
DRGHW, §265.52(e)	Failure to include a list of emergency equipment in contingency plan
DRGHW, §265.16(d)(1)	Failure to provide list of employees and job titles
DRGHW, §265.16(d)(2)	Failure to provide job descriptions
DRGHW, §265.16(a)	Failure to provide training

VIOLATIONS IDENTIFIED IN EPA'S NOTICE OF VIOLATION

December 13, 2007 and February 5, 2008

VIOLATION CITATION	VIOLATION DESCRIPTION
DRGHW, §262.11	Failure to make a hazardous waste determination
DRGHW, §262.34(a)(3)	Failure to label hazardous waste container
DRGHW, §262.34(a)(2)	Failure to place accumulation start date on hazardous waste container
DRGHW, §265.173(a)	Failure to maintain a closed container
DRGHW, §265.16	Failure to provide training
DRGHW, §265.16(d)(1)	Failure to provide list of employees and job titles
DRGHW, §265.16(d)(2)	Failure to provide job descriptions
DRGHW, §265.52(c)	Failure to include arrangements with local authorities in contingency plan
DRGHW, §265.52(e)	Failure to include a list of emergency equipment in contingency plan
DRGHW, §273.13(d)	Failure to collect universal waste lamps in a closed container
DRGHW, §273.14(e)	Failure to label universal waste lamp container

CONTINUING VIOLATIONS

December 13, 2007; February 5, 2008; July 1, 2008; and August 20, 2008

VIOLATION CITATION	VIOLATION DESCRIPTION
DRGHW, §262.34(a)(3)	Failure to label hazardous waste container
DRGHW, §262.34(a)(2)	Failure to place accumulation start date on hazardous waste container
DRGHW, §265.16	Failure to provide training

CONTINUING VIOLATIONS

July 1, 2008 and August 20, 2008

VIOLATION CITATION	VIOLATION DESCRIPTION
DRGHW, §262.34(a)(3)	Failure to label hazardous waste container
DRGHW, §262.34(a)(2)	Failure to place accumulation start date on hazardous waste container
DRGHW, §122.1(c)	Failure to obtain a permit (storage over 90 days)
DRGHW, §262.20(a)	Failure to prepare a manifest for a shipment of hazardous waste
DRGHW, §266.70(c)	Failure to maintain speculative accumulation documentation (Precious Metal)
DRGHW, §265.177(c)	Failure to separate incompatible wastes
DRGHW, §265.31	Failure to maintain facility in a manner to prevent a release
DRGHW, §265.16(a)	Failure to provide training

RECOMMENDATIONS:

EPA Region III will receive and evaluate the findings of this follow-up compliance assessment.

KGJ: MAF: tcc
Procino Plating -- August 20, 2008.doc

CONTINUING VIOLATIONS

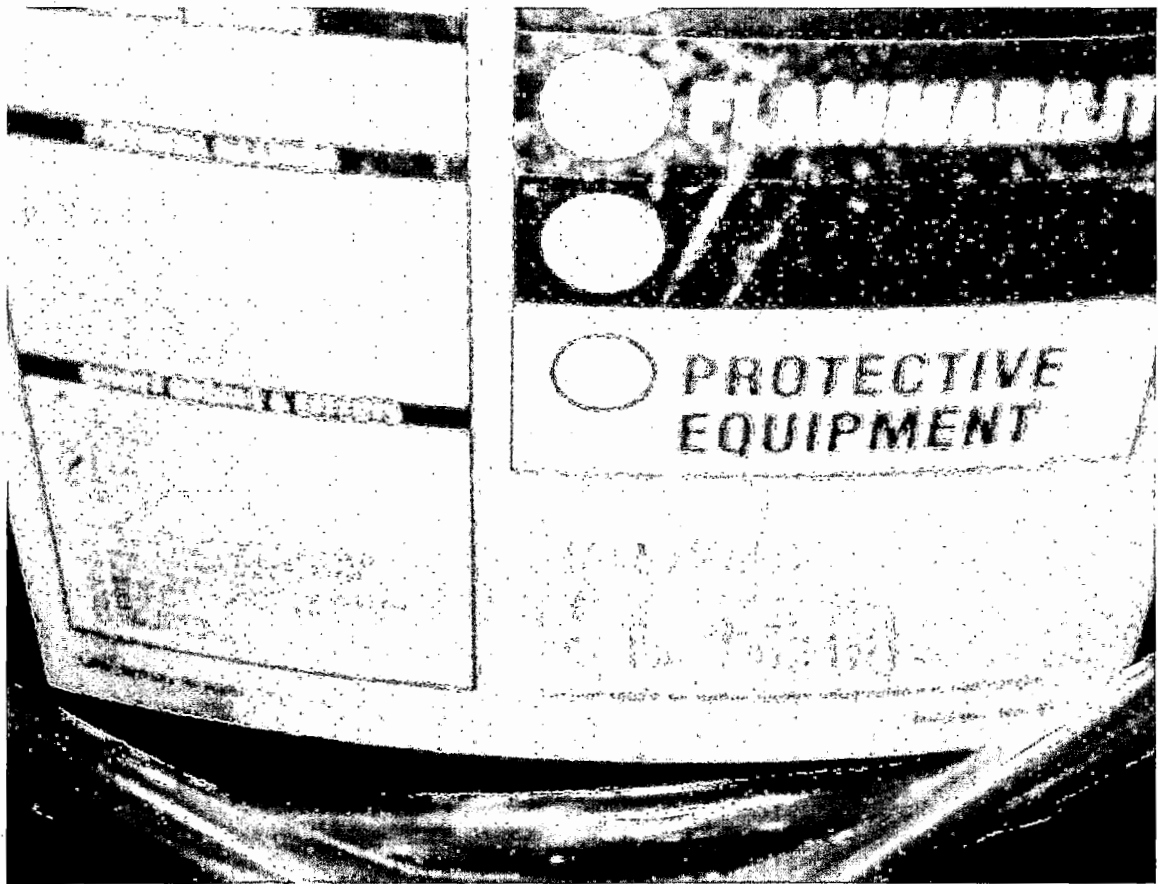
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DRGHW, §265.16(a)	Failure to provide training

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KGJ: MAF: tcc
Procino Plating – August 20, 2008.doc



Photograph #1

Label on Container #7 containing spent brass plating bath solution indicating the waste is to be treated in the facility's on-site wastewater treatment unit. The facility stated in their July 27, 2008 response to EPA Region III's Information Request Letter (IRL) that this was good, usable material. However, on August 20, 2008, the label still indicates the drum contains a waste material.



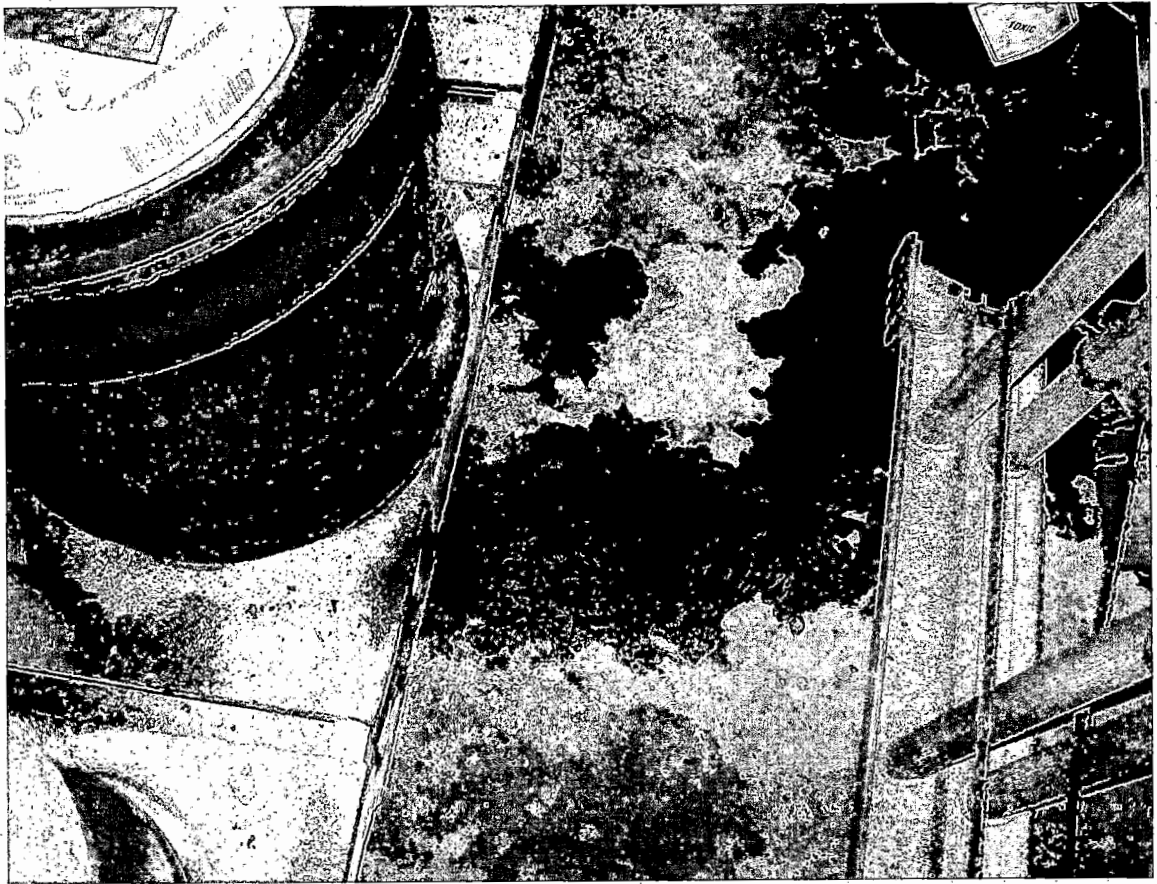
Photograph #2

SHWMB representatives observed this rusted container of Alk Scale & Oxide Remover (Container #29) stored next to 5 – 55 gallon drums of material labeled “Chrome.” SHWMB representatives were unable to determine if the containers labeled “Chrome” contained cyanides or were a waste.



Photograph #3

SHWMB representatives observed an active leak black liquid on the concrete floor beneath the wooden pallet holding Containers 72-85 (Row 3). There were also several extremely rusted containers on this pallet, including containers of Iridite, Entek CU-55, Econo-chrome, and several unknowns.



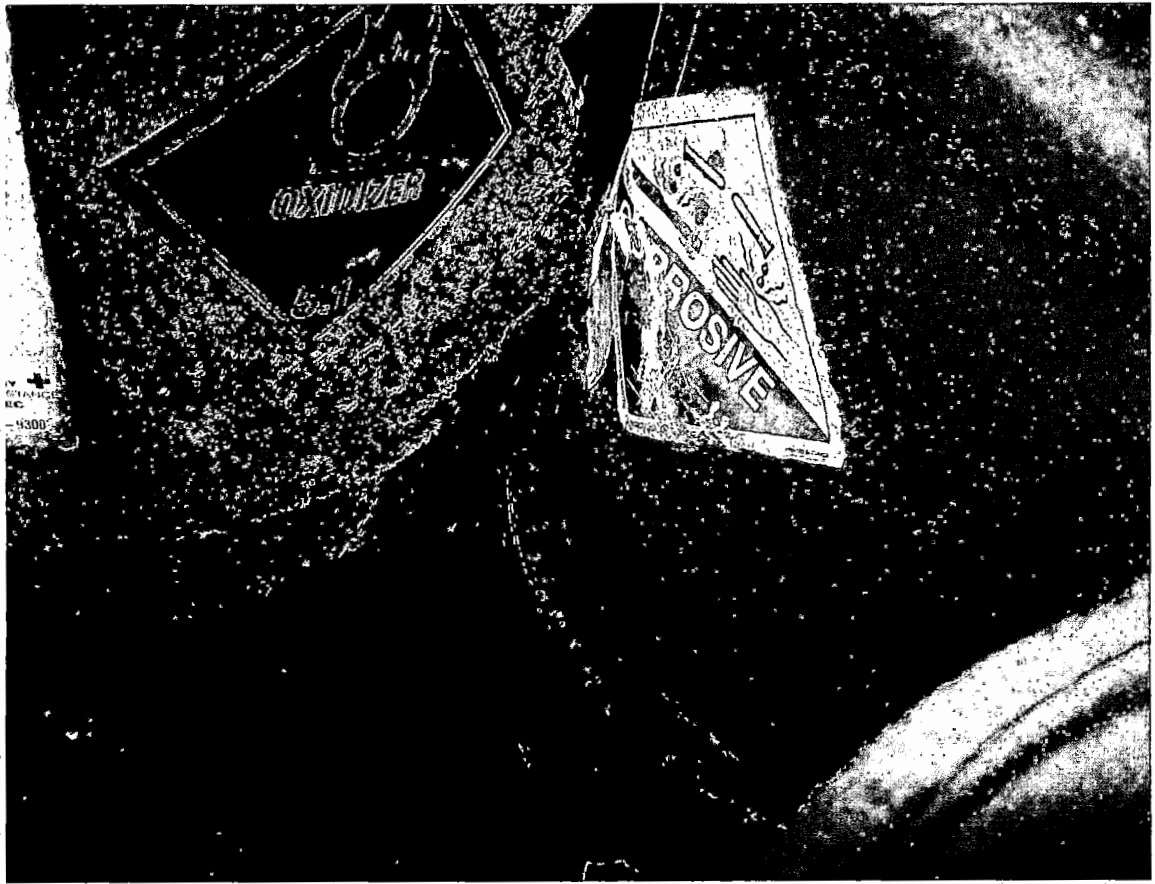
Photograph #4

SHWMB representatives observed an active leak black liquid (also shown in Photograph #3 above) on the concrete floor beneath the wooden pallet holding Containers 72-85 (Row 3). There were also several extremely rusted containers on this pallet, including containers of Iridite, Entek CU-55, Econo-chrome, and several unknowns.



Photograph #5

SHWMB representatives observed an extremely rusted container with a manufacturer's (MacDermid) product label reading "Iridite" (Container #83). The photograph shows a hole in the side of the container.



Photograph #6

SHWMB representatives observed an extremely rusted container with a manufacturer's (MacDermid) product label reading "Iridite" (Container #83). The photograph shows a black liquid leaking from the bottom of the container on the left. The photograph also shows several rusted containers containing an unknown material in the immediate vicinity.



Photograph #7

SHWMB representatives observed several other extremely rusted containers on the wooden pallet holding Containers #72-85. The container on top is also open and contains an unknown corrosive material.



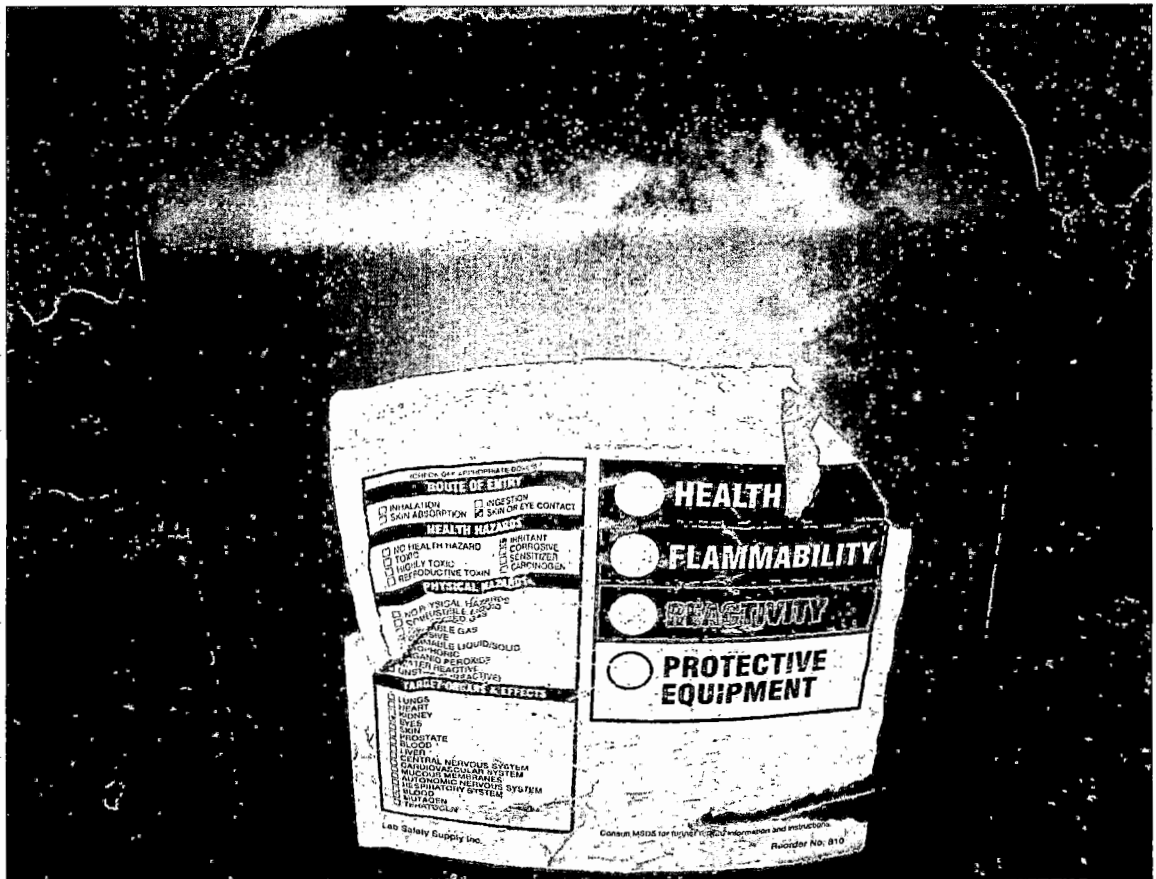
Photograph #8

Overview of Containers #72-45 detailed in Photographs #3-7 above.



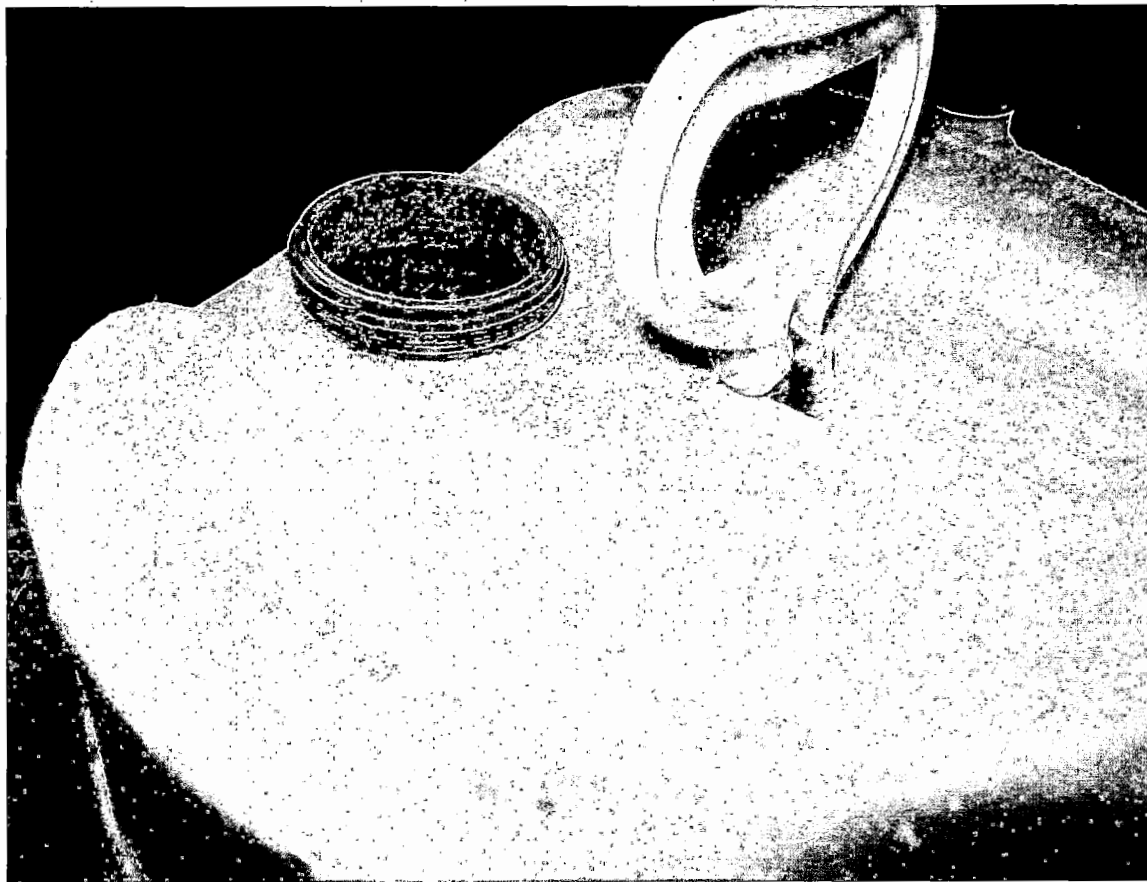
Photograph #9

SHWMB representatives observed an approximately 2.5-gallon poly jug containing an unknown liquid. (Container #40)



Photograph #10

Zoom in on the container identified in Photograph #7 showing the container is not labeled to identify its contents.



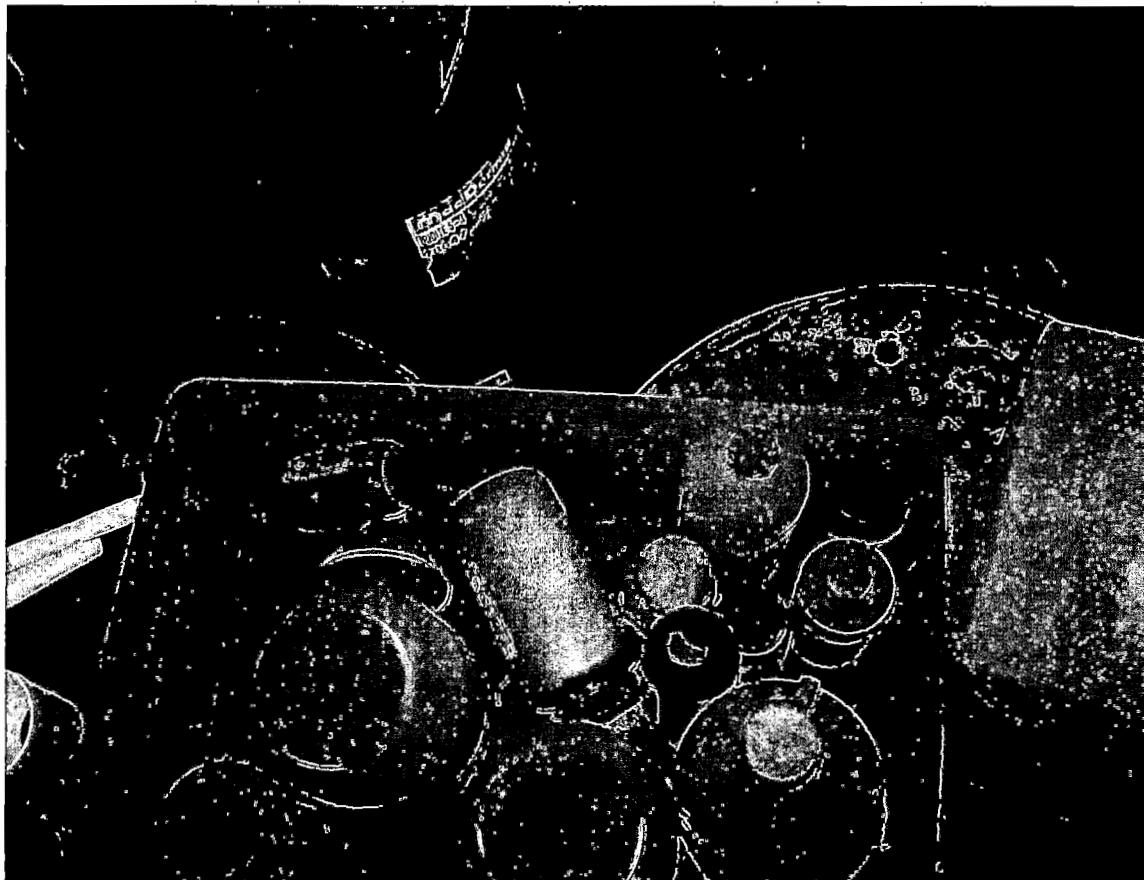
Photograph #11

SHWMB representatives observed a 2.5-gallon poly jug containing an unknown material. This container was open and observed on the pallet holding Containers #30-40.



Photograph #12

SHWMB representatives observed a 10-gallon fiber drum labeled with a manufacturer's product label as containing "MacDermid ALPREP 291B." The bottom of the fiber container is deteriorated and the bottom of the container is turning green.



Photograph #13

SHWMB representatives observed several small bottles of what appeared to be laboratory chemicals (Containers #60-71). SHWMB representatives were unable to determine the contents of these containers.

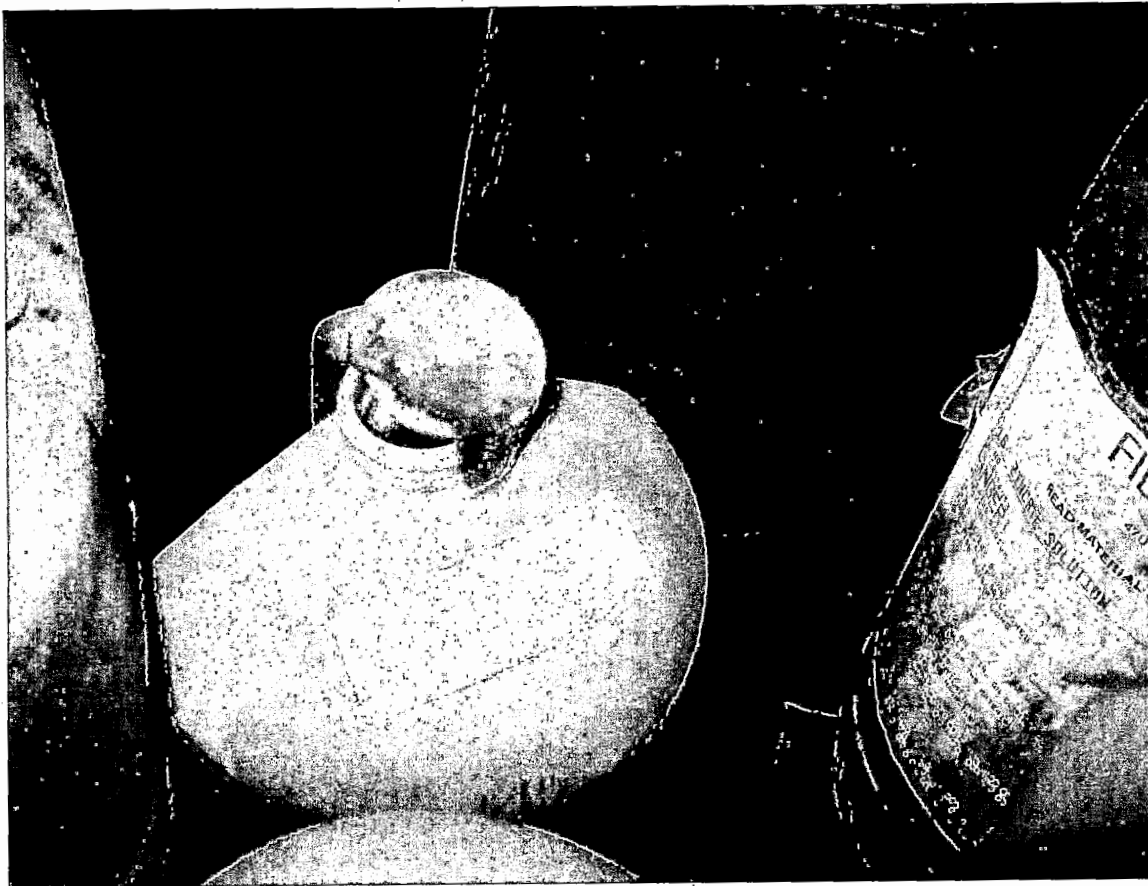
The green poly 55-gallon drum shown in the right of the picture (Container #58) was unlabeled and its contents are unknown. The 55-gallon to the left of it contains "liquid caustic potash," which is corrosive and incompatible with acids.

The rusted containers in the background of the picture are those detailed in Photographs #3-8 (Containers 72-85), of which, at least eight contain chromic acid, which is incompatible with the liquid caustic potash.



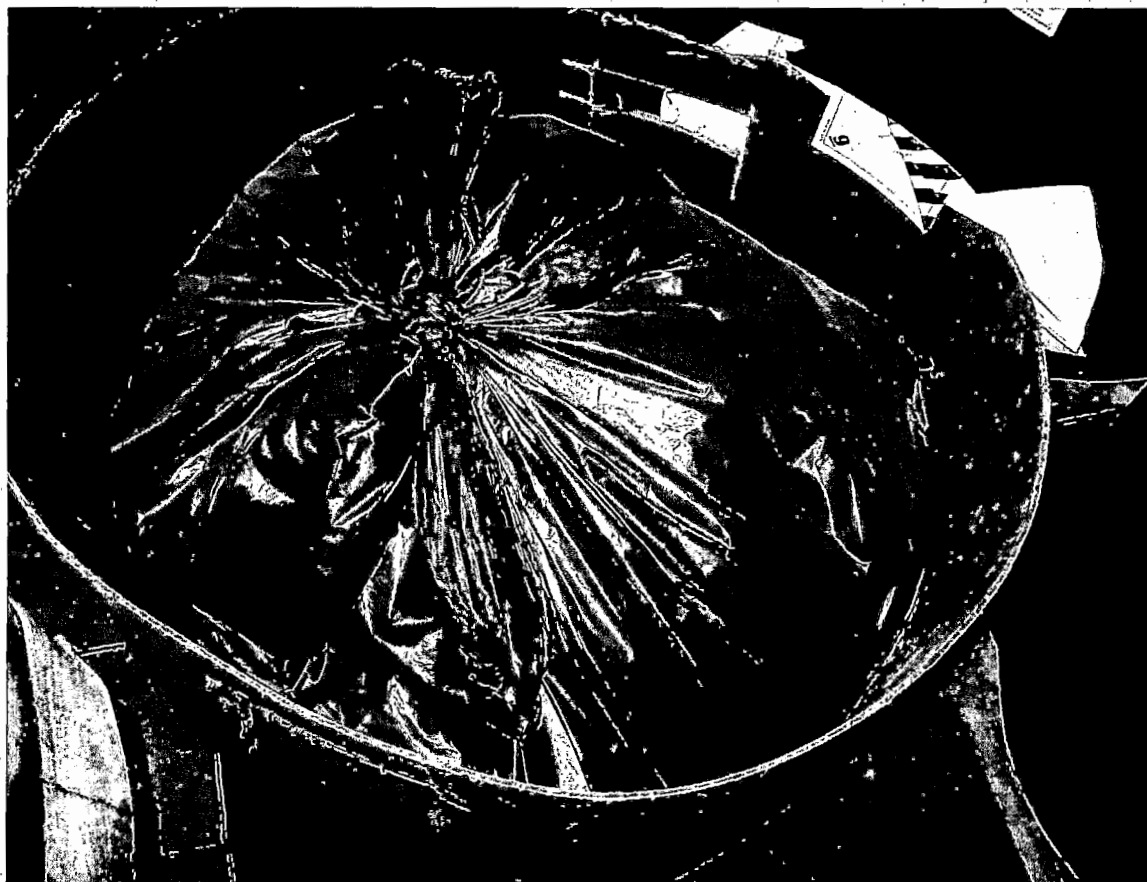
Photograph #14

SHWMB representatives observed a green poly 55-gallon drum (Container #58). The container was not labeled and its contents are unknown.



Photograph #15

SHWMB representatives observed a 1-gallon poly jug (Container #54). The label on the container was illegible and the lid was broken.



Photograph #16

SHWMB representatives observed an approximately 30-gallon poly drum with the top cut off and handles cut into the side (Container #45). The container is used to accumulate solidified gold plating bath solution, which is sent off-site for gold reclamation. This container was observed during the July 1, 2008 FUI without a plastic liner and open.



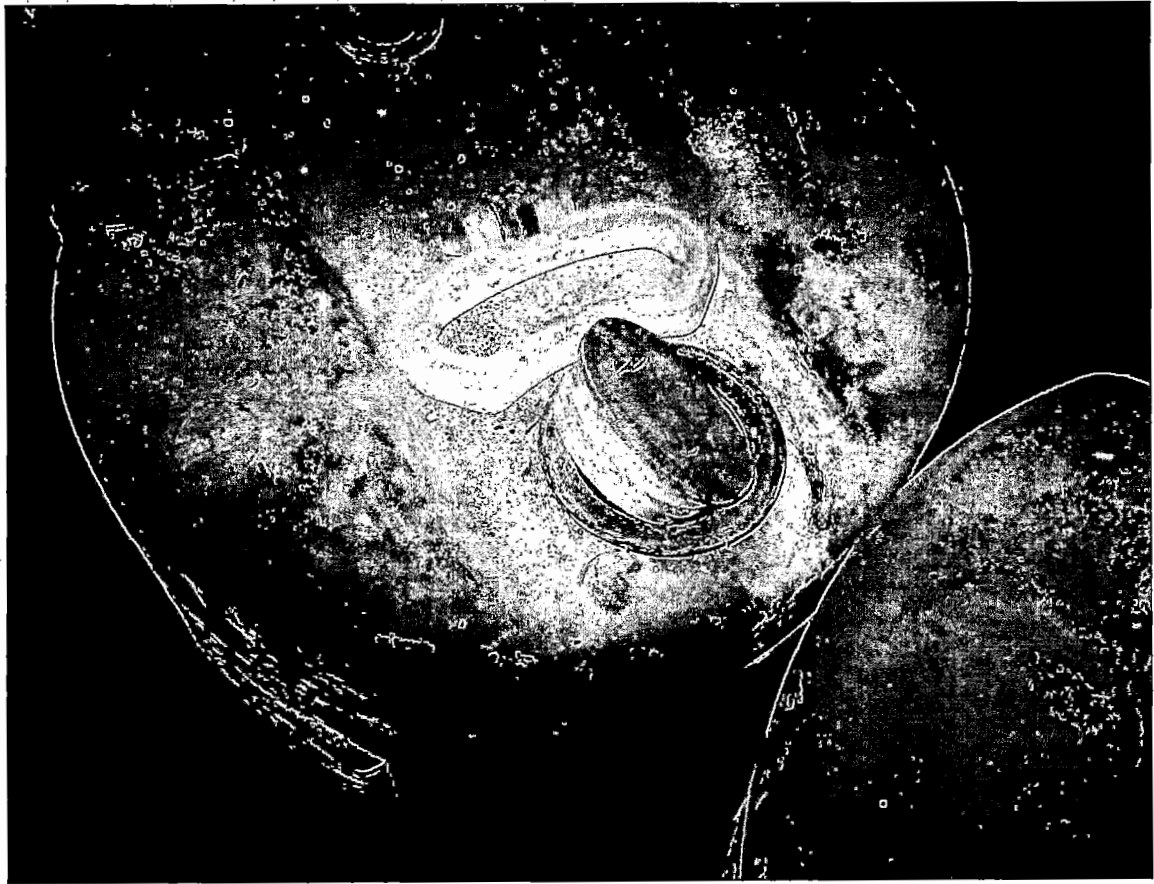
Photograph #17

Close-up of the label for the container described in Photograph #16.



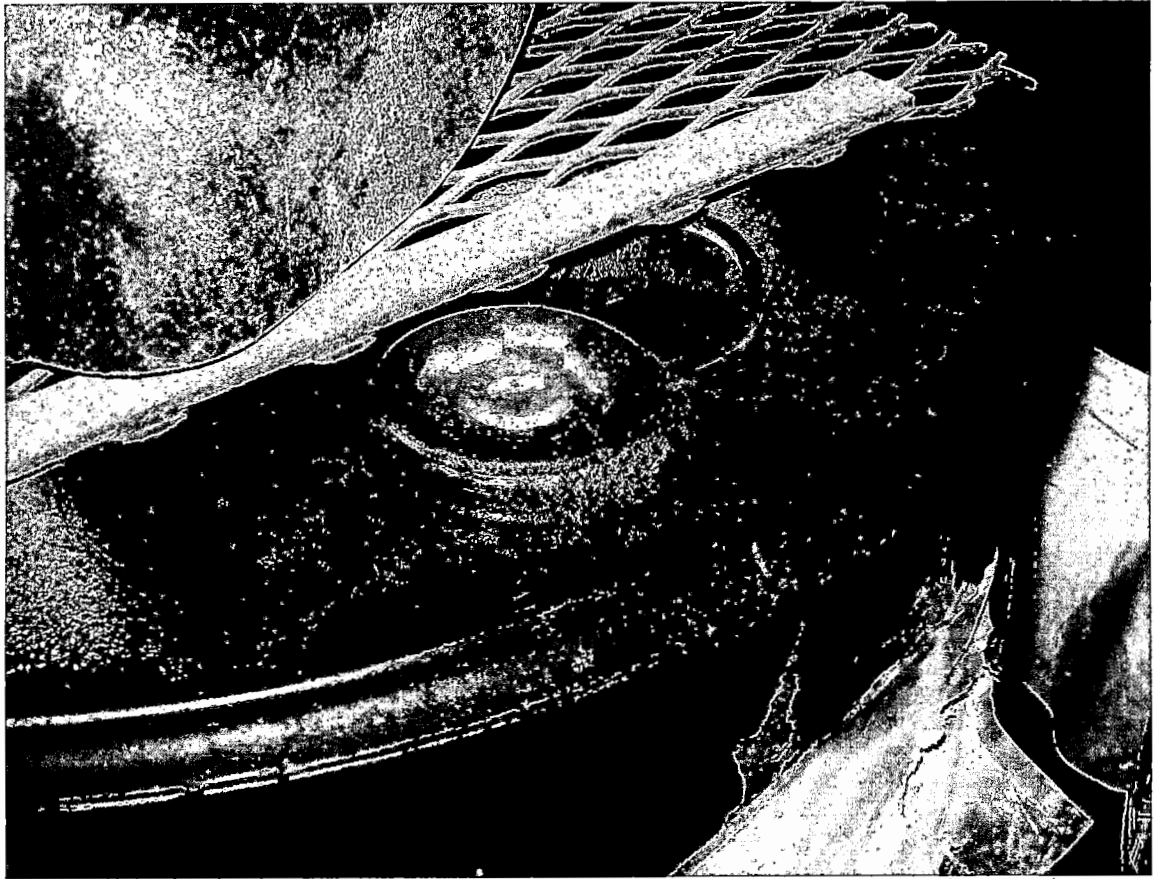
Photograph #18

SHWMB representatives observed an open tank of nitric acid. The facility representatives had previously stated that this material, which was also observed during the July 1, 2008 FUI, was not a waste.



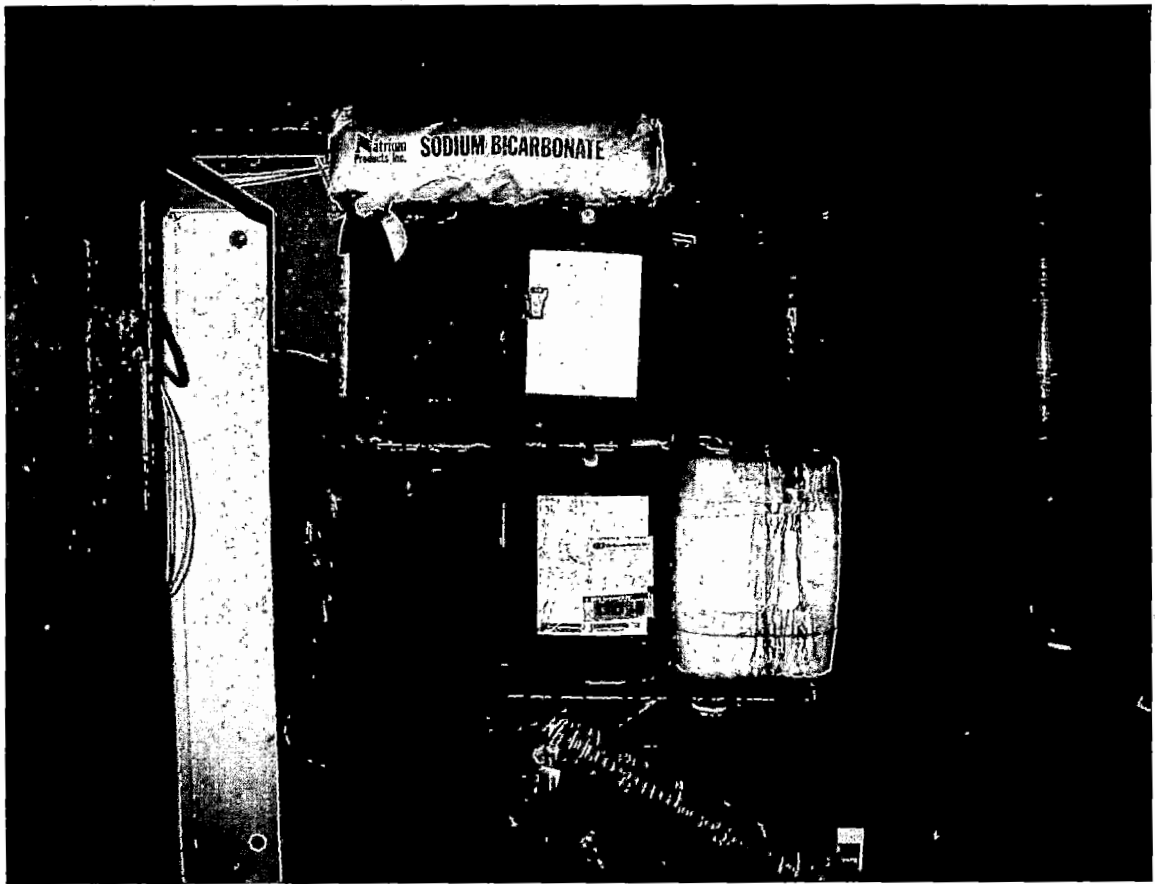
Photograph #19

SHWMB representatives observed a 15-gallon poly jug which was open (Container #123). SHWMB representatives were unable to determine the contents, but the container had a corrosive warning label on it.



Photograph #20

SHWMB representatives observed a container (Container #125) with a liquid pooled on the top of the lid. The container was labeled with a manufacturer's product label indicating it contained Isoprep 172. According to the MSDS for Isoprep 172, the main ingredient is potassium hydroxide (30-35%) and the material is corrosive.



Photograph #21

SHWMB representatives observed several containers in Row 7 (Containers #150-177). The labels on the smaller containers on top are either illegible (with the exception of the bag of sodium bicarbonate) or SHWMB representatives could not access the containers and the contents are unknown.

The remaining 15 – 55 gallon drums also could not be accessed by SHWMB representatives to determine their contents.



Photograph #22

Different angle of Photograph #21.

SHWMB representatives observed several containers in Row 7 (Containers #150-177). The labels on the smaller containers on top are either illegible (with the exception of the bag of sodium bicarbonate) or SHWMB representatives could not access the containers and the contents are unknown.

The remaining 15 – 55 gallon drums also could not be accessed by SHWMB representatives to determine their contents.



Photograph #23

SHWMB representatives observed an unknown yellow-greenish liquid on top of this 55-gallon poly drum (Container #186). The container was not labeled and its contents are unknown.



Photograph #24

SHWMB representatives observed an open 25 lb bag of ammonium bifluoride (Container #192). According to the MSDS, ammonium bifluoride is incompatible with acids and alkalis.



Photograph #25

SHWMB representatives observed a 5-gallon fiber drum with a manufacturer's product label indicating it contained stannous sulfate. The container had water marks and was rusted at the bottom.



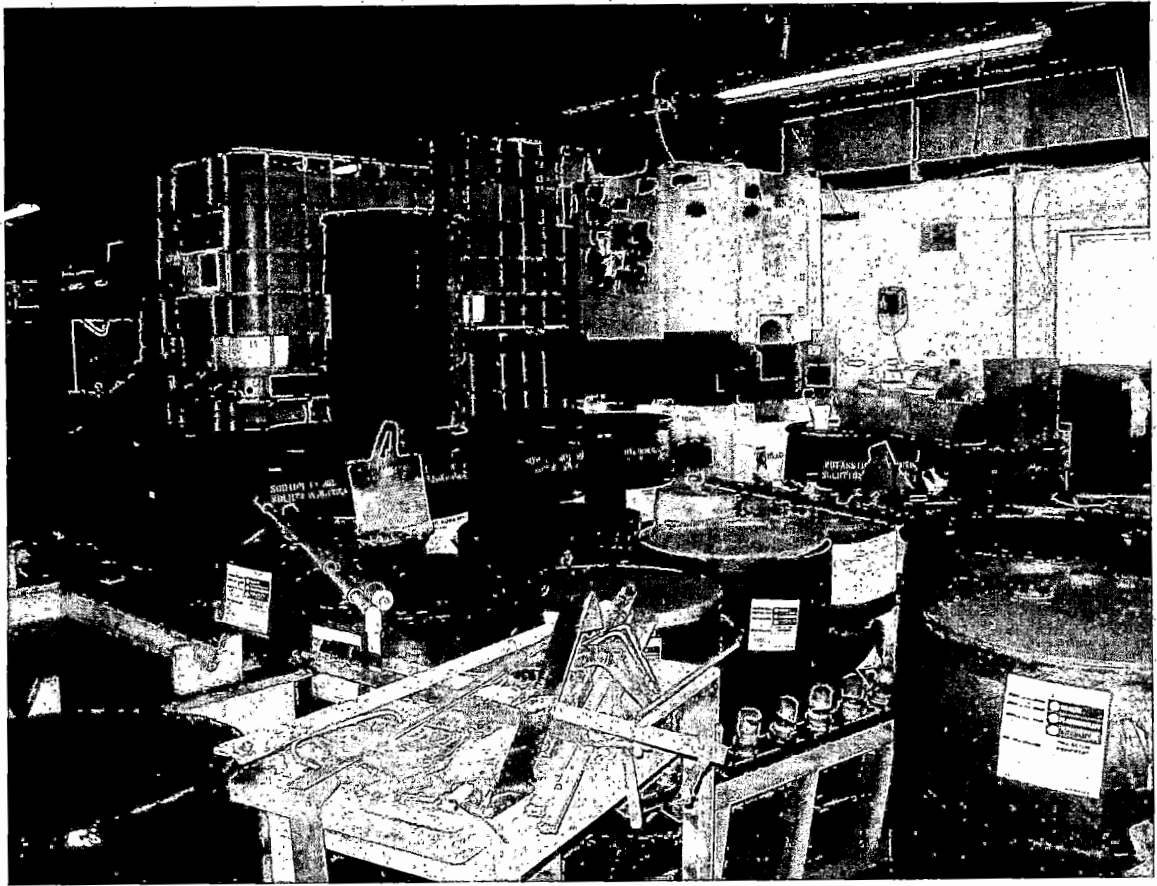
Photograph #26

Overview of containers observed in Row 9 (Containers #208-215). The two 55-gallon drums in the right of the picture are unlabeled and rusted. The contents of all of the containers are also unknown.



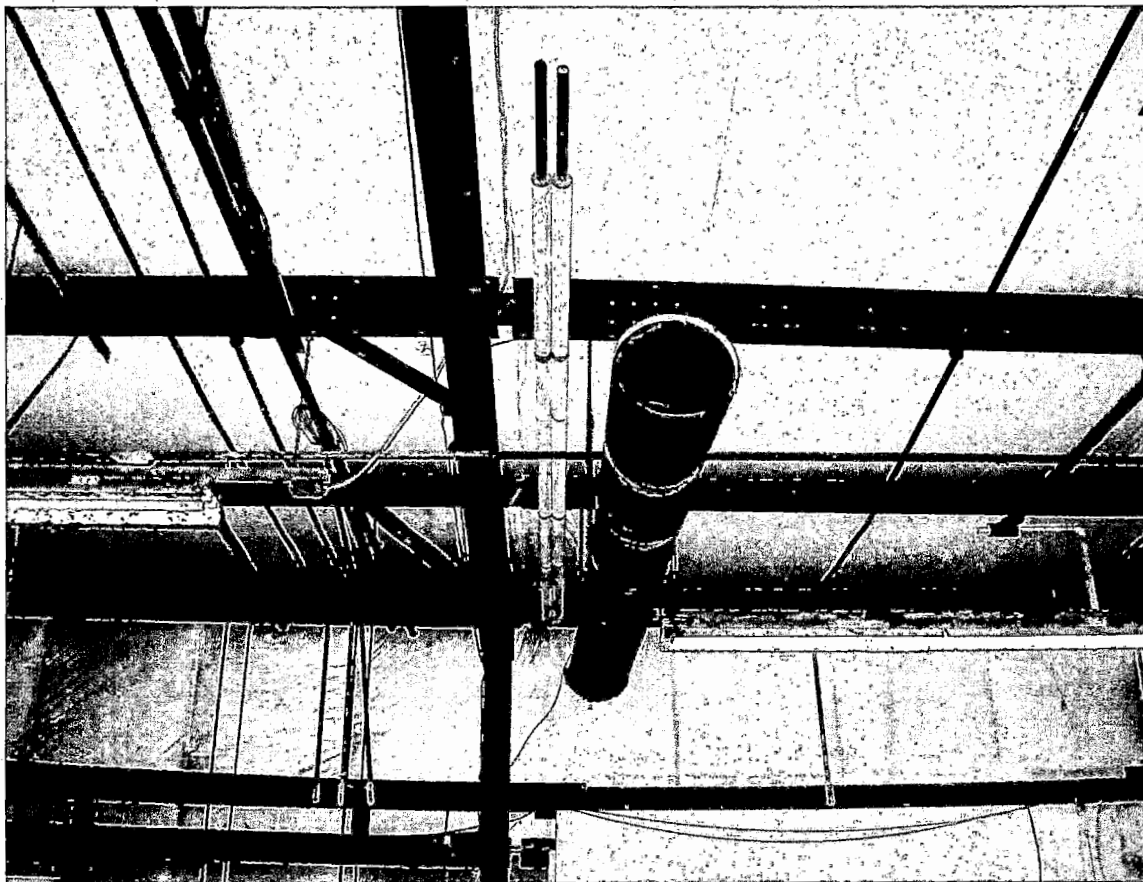
Photograph #27

Overview of facility standing at Row 9 (foreground) looking toward Row 5 (background).



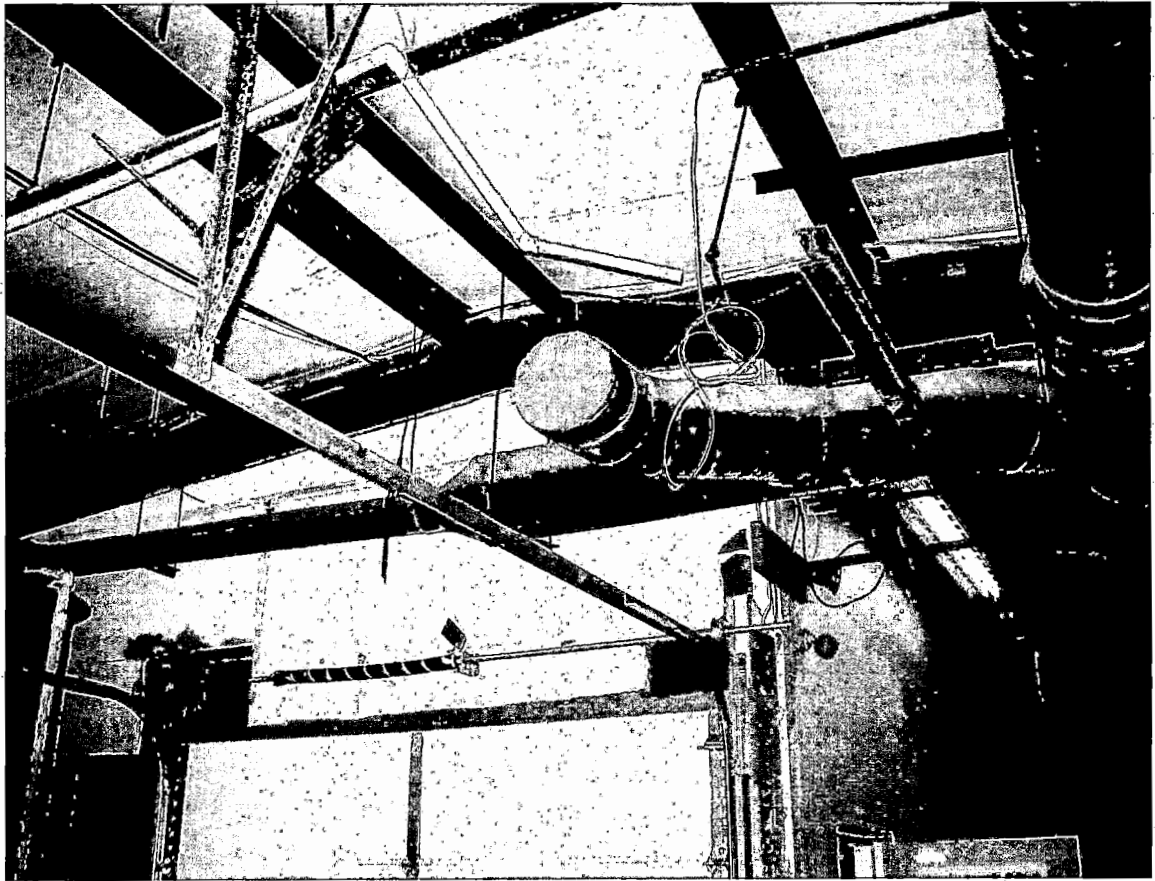
Photograph #28

Overview of facility standing at Row 2 (right) looking toward Row 5 (background).



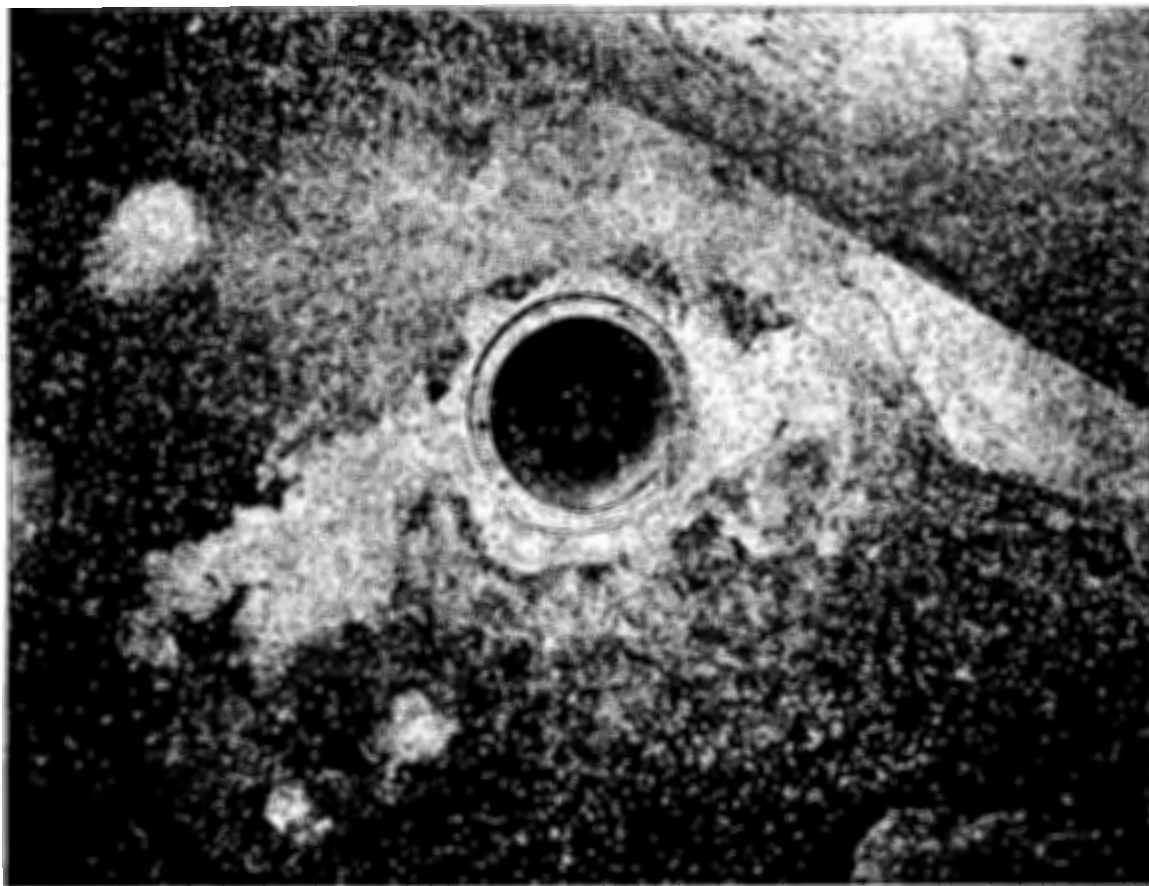
Photograph #29

SHWMB representatives observed open-ended piping/ductwork in the wall between the Drum/Container Storage Area and the Grinder/polisher.



Photograph #30

SHWMB representatives observed open-ended piping/ductwork in the area across from the Wastewater Treatment Unit. The two doors shown in the bottom of the picture lead into the potential French Fry manufacturing area in Building #2.



Photograph #31

SHWMB representatives observed a PVC pipe in the concrete floor in Building #2. Refer to the "Zoom In of Drum/Container Storage Area" for the location of the pipe.



Photograph #32

SHWMB representatives observed several drums of chemicals used in the facility's on-site wastewater treatment unit.



Photograph #33

SHWMB representatives observed several drums of chemicals used in the facility's on-site wastewater treatment unit.



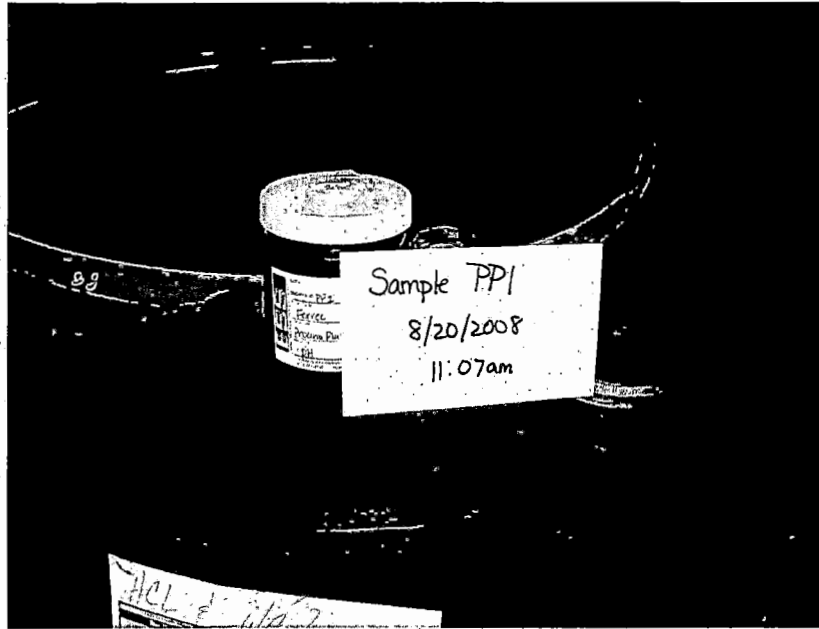
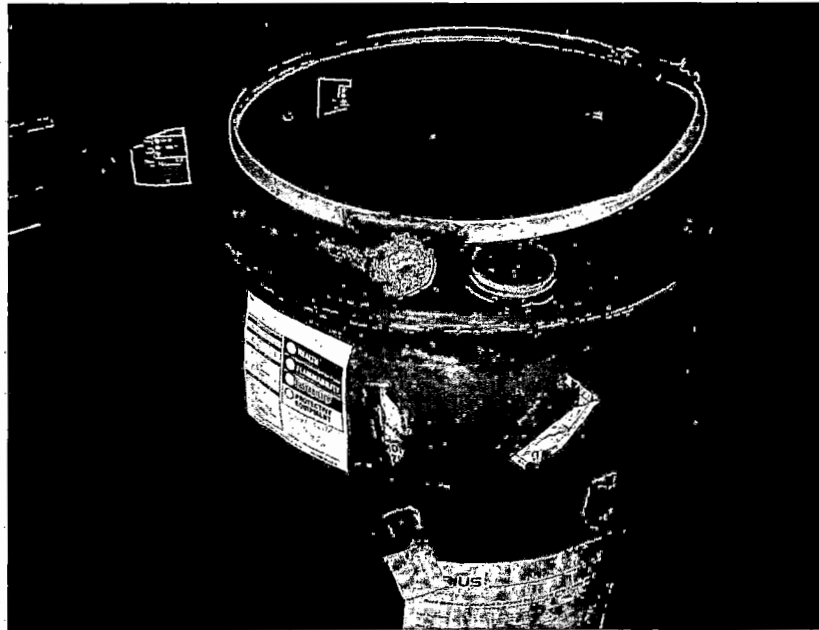
Photograph #34

SHWMB representatives observed a vial of liquid on the table next to the wastewater treatment unit. It was unclear at the time of the assessment what was in the vial or how the facility disposes of this waste stream.



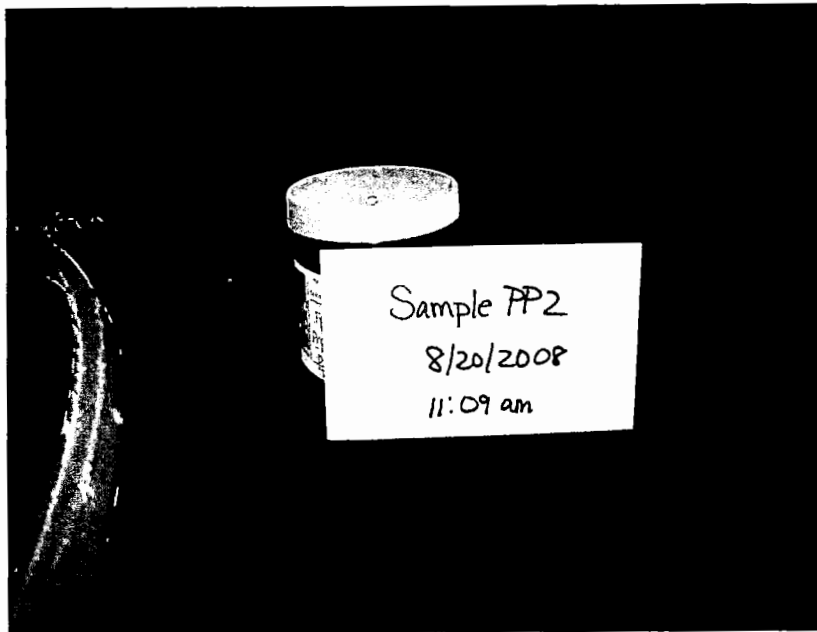
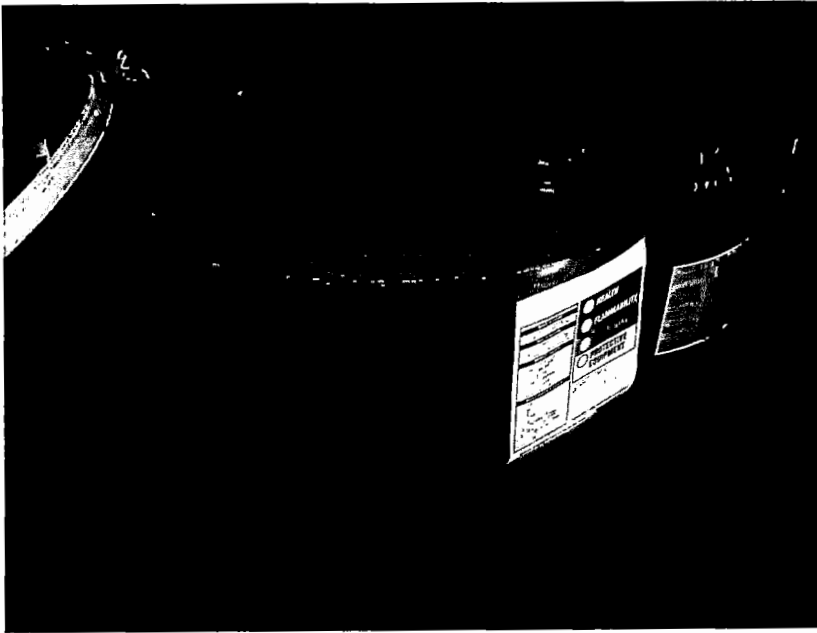
Photograph #35

SHWMB representatives observed an unknown solid on the ground near the table located next to the wastewater treatment unit.



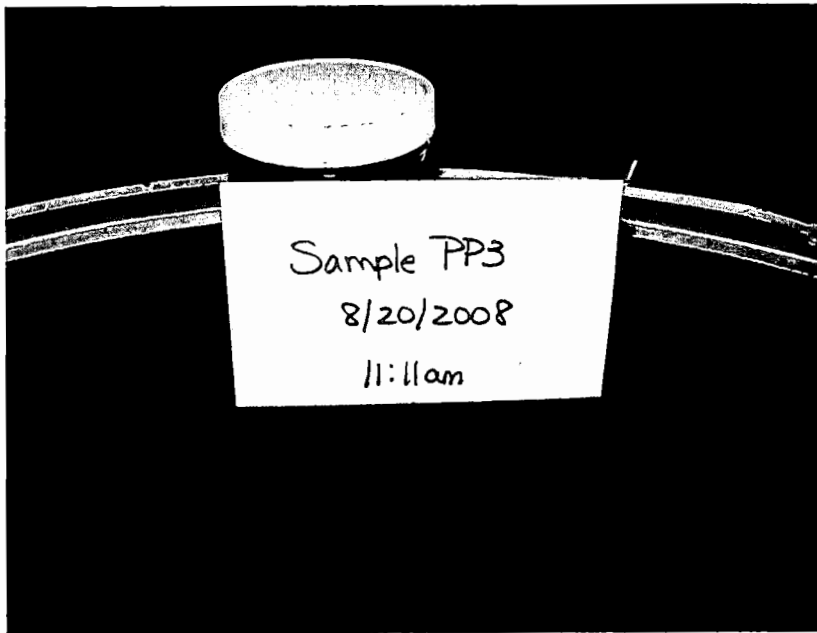
Photographs #36 and 37

SHWMB representatives obtained a sample from Container #17 to be analyzed for pH.



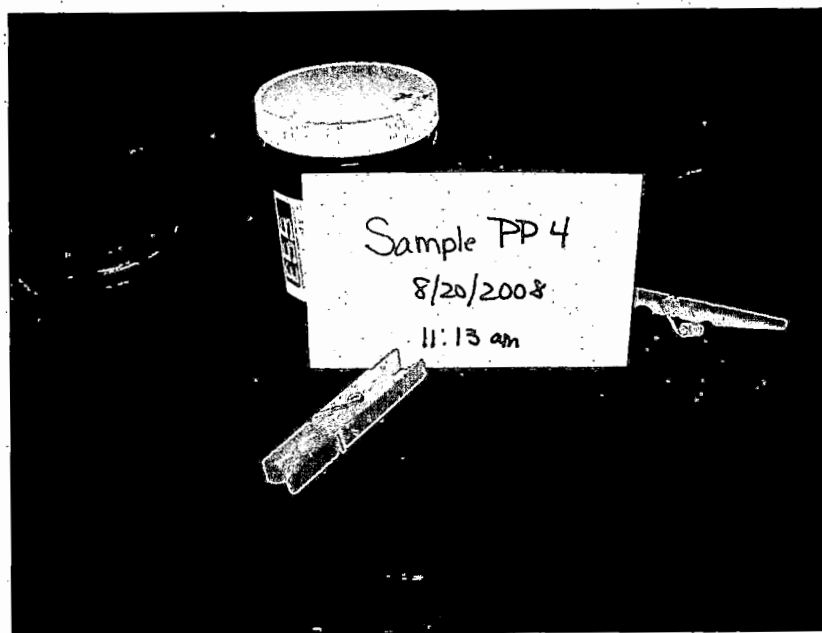
Photographs #38 and 39

SHWMB representatives obtained a sample from Container #18 to be analyzed for pH.



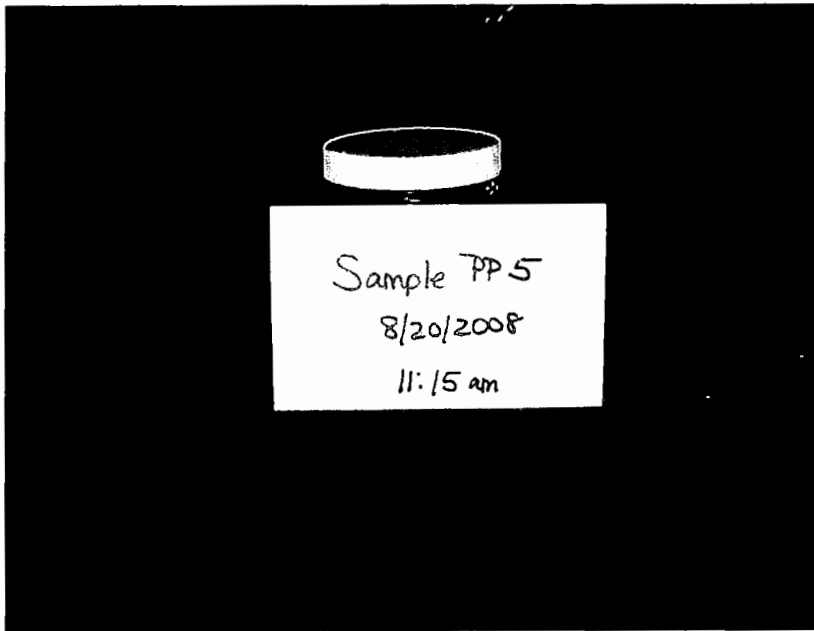
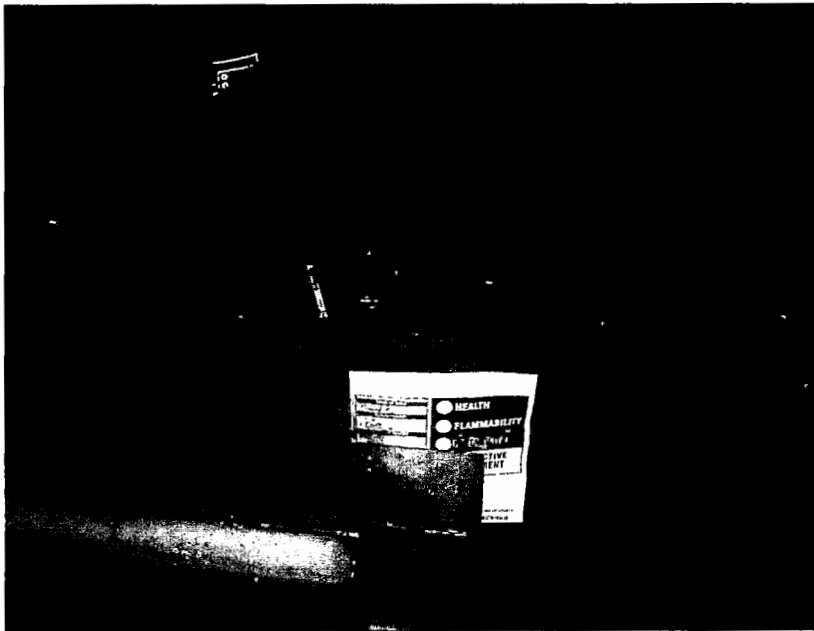
Photographs #40 and 41

SHWMB representatives obtained a sample from Container #19 to be analyzed for pH.



Photographs #42 and 43

SHWMB representatives obtained a sample from Container #42 to be analyzed for pH.



Photographs #44 and 45

SHWMB representatives obtained a sample from Container #41 to be analyzed for pH.

ATTACHMENT #1

- LAYOUT OF BUILDING #2
 - DRUM STORAGE AREA
 - CONTAINER INVENTORY
-

Bldg. #2—General Layout

Grinder/polisher

Drum/Container Storage Area

door

Old Laboratory

door

door

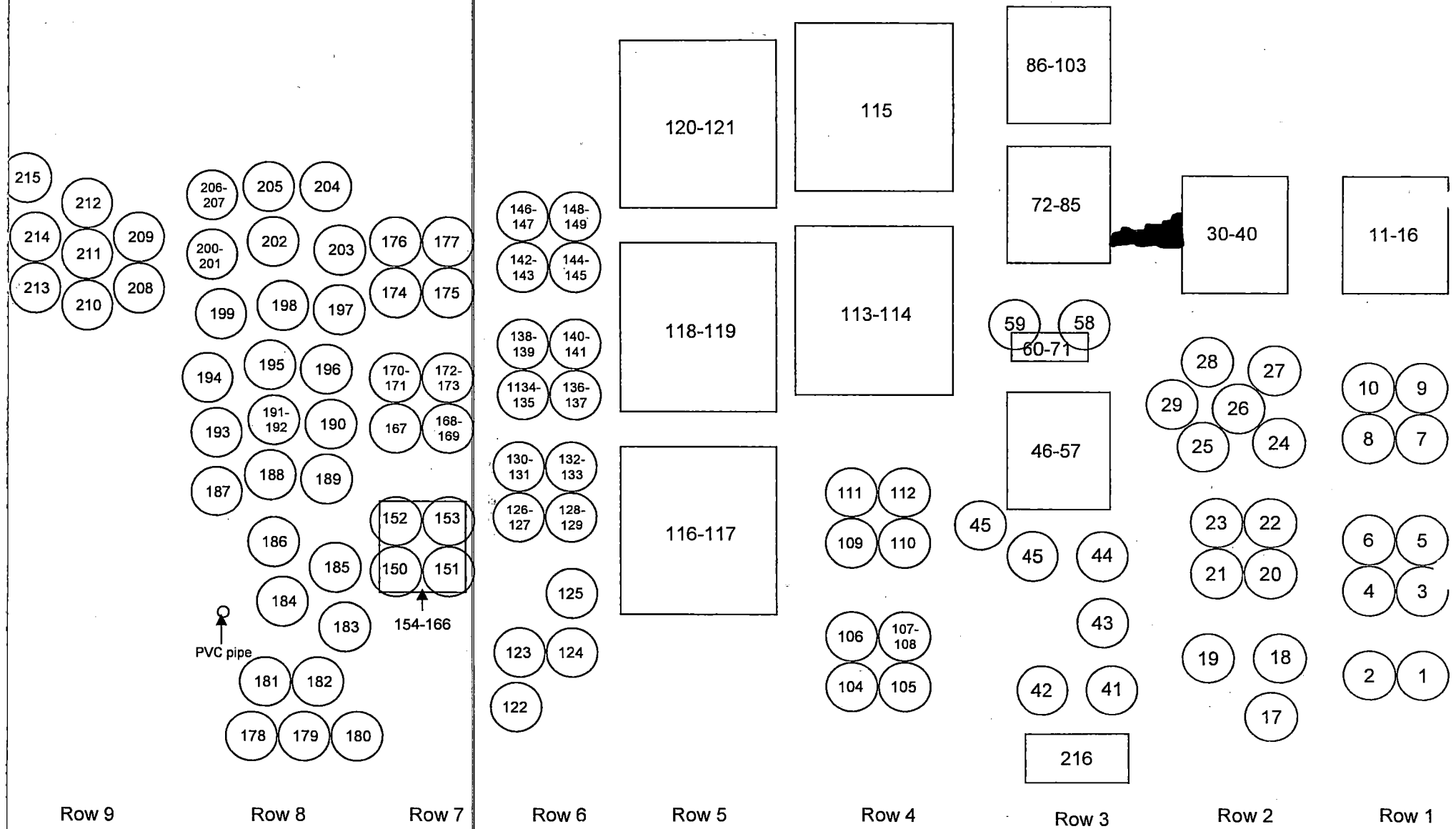
Garage door

Potential French Fry Vending
Machine Manufacturing

Raw Material Storage for WWT
chemicals—sodium hypochlo-
rite, sodium hydroxide

Wastewater Treatment Area

Zoom In of Drum/Container Storage Area



#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
1	55 gal	poly	HCl and water	Corrosive; highly reactive with bases and metals; formation of hydrogen cyanide gas if reacted with cyanides		
2	55 gal	poly	Isoprep 172	corrosive	potassium hydroxide (30-35%)	
3	55 gal	poly	tin plating bath	Contains cyanides; reactive with acids		
4	55 gal	poly	tin plating bath	Contains cyanides; reactive with acids		
5	55 gal	poly	tin plating bath	Contains cyanides; reactive with acids		
6	55 gal	poly	tin plating bath	Contains cyanides; reactive with acids		
7	55 gal	poly	brass plating bath	Contains cyanides; reactive with acids	Container labeled both brass plating bath and silver plating bath; labeled "to be treated"	1
8	55 gal	poly	brass plating bath	Contains cyanides; reactive with acids	Labeled "no good - to be treated"	
9	55 gal	poly	brass plating bath	Contains cyanides; reactive with acids		
10	55 gal	poly	brass plating bath	Contains cyanides; reactive with acids		
11	~25 lb	bag	sodium nitrate	oxidizer; incompatible with cyanides		
12	~35 lb	bag	barium carbonate		According to MSDS, may exhibit characteristic of hazardous waste	
13	~35 lb	bag	barium carbonate		According to MSDS, may exhibit characteristic of hazardous waste	
14	~25 lb	bag	ammonium chloride	Incompatible with strong acids and bases	Explosive nitrogen trichloride gas forms upon reaction of ammonium chloride and hydrogen cyanide	
15	~25 lb	bag	ammonium chloride		Explosive nitrogen trichloride gas forms upon reaction of ammonium chloride and hydrogen cyanide	

#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
16	~35 lb	bag	muriate of potash	Incompatible with strong acids	Formation of HCl gas if reacted with acid; may explode if mixed with potassium permanganate (Container 188) and sulfuric acid (Container 118)	
17	55 gal	poly	HCl and water	Corrosive; highly reactive with bases, metals; formation of hydrogen cyanide gas if reacted with cyanides	Dated 7/9/08 (no hazardous waste label, although facility stated was waste)	36,37
18	55 gal	poly	HCl and water		Dated 7/9/08 (no hazardous waste label, although facility stated was waste)	38,39
19	55 gal	poly	HCl and water		Label fell off and was on floor; dated 7/9/08 (no hazardous waste label, although facility stated was waste)	40,41
20	55 gal	poly	sodium hypochlorite		New product	28
21	55 gal	poly	sodium hypochlorite	Incompatible with ammonium salts (Containers 14 and 15), methanol, and acids	New product	28
22	55 gal	poly	sodium hypochlorite		New product	28
23	55 gal	poly	sodium hypochlorite		New product	28
24	55 gal	poly	chrome			2
25	55 gal	poly	chrome	corrosive; oxidizer; toxic		2
26	55 gal	poly	chrome			2
27	55 gal	poly	chrome			2
28	55 gal	poly	chrome			2
29	30 gal	steel	Alk Scale & Oxide Remover	corrosive; oxidizer		2
30	2.5 gal	poly	lead concentrate	corrosive; oxidizer; toxic		
31	2.5 gal	poly	unknown			
32	2.5 gal	poly	unknown			
33	2.5 gal	poly	unknown			
34	2.5 gal	poly	unknown			
35	2.5 gal	poly	unknown			
36	2.5 gal	poly	unknown			
37	2.5 gal	poly	unknown			
38	2.5 gal	poly	unknown			
39	2.5 gal	poly	unknown			
40	2.5 gal	poly	unknown			9,10

#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
41	55 gal	poly	HCl and water	Corrosive; highly reactive with bases and metals; formation of hydrogen cyanide gas if reacted with cyanides		
42	55 gal	poly	HCl and water			
43	~30 gal	poly	gold reclamation		Facility representatives explained this is gold plating bath solution, with a solid absorbant added.	
44	~30 gal	poly	gold reclamation		Facility representatives explained this is gold plating bath solution, with a solid absorbant added.	
45	~30 gal	poly w/ liner	Cyanide	Incompatible with acids - forms hydrogen cyanide gas	Facility representatives explained this is gold plating bath solution, with a solid absorbant added.	16,17
46	5 gal	poly	Nichem - unknown			
47	5 gal	poly	Nichem - unknown			
48	5 gal	poly	Nichem - unknown			
49	5 gal	poly	makeup			
50	5 gal	poly	makeup			
51	5 gal	poly	makeup			
52	5 gal	poly	nickel sulfate			
53	5 gal	poly	NuCoat Poly B Black			
54	1 gal	poly jug	unknown		lid broken	15
55	5 gal	poly	zincate solution	corrosive		
56	5 gal	poly	zincate solution	corrosive		
57	5 gal	poly	zincate solution	corrosive		
58	55 gal	poly	unknown		No label	14
59	55 gal	poly	liquid caustic potash	corrosive - incompatible with acids		
60	~1 qt.	glass	unknown			13
61	~1 qt.	poly	unknown			13
62	~1 qt.	poly	unknown			13
63	~12 oz.	poly	unknown			13
64	~12 oz.	poly	unknown			13
65	~12 oz.	poly	unknown			13

#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
66	~8 oz.	poly	unknown			13
67	~8 oz.	poly	unknown			13
68	~8 oz.	poly	unknown			13
69	~4 oz.	poly	unknown			13
70	~4 oz.	poly	unknown			13
71	~4 oz.	poly	unknown			13
72	30 gal	metal	Econo-chrome	corrosive, oxidizer, toxic	Extremely rusted; According to MSDS, main ingredient is chromic acid	8
73	30 gal	metal	Chromic acid flake	corrosive, oxidizer, toxic	Extremely rusted	8
74	30 gal	metal	Iridite	corrosive, oxidizer, toxic	Extremely rusted; According to MSDS, main ingredient is chromium (IV) oxide (chromic acid)	8
75	30 gal	metal	unknown		Extremely rusted	8
76	30 gal	metal	unknown		Extremely rusted	8
77	30 gal	metal	unknown		Extremely rusted	8
78	10 lb	metal pail	Iridite	corrosive, oxidizer, toxic	Open	8
79	10 gal	metal	Iridite	corrosive, oxidizer, toxic	Extremely rusted	8
80	10 gal	metal	chromium salt	toxic	Extremely rusted	8
81	15 gal	metal	Iridite	corrosive, oxidizer, toxic	Extremely rusted	8
82	10 gal	metal	Entek CU-55	flammable	Extremely rusted	8
83	10 gal	metal	Iridite	corrosive, oxidizer, toxic	Extremely rusted and leaking	5,6
84	10 gal	metal	Econo-chrome	corrosive, oxidizer, toxic	Extremely rusted; According to MSDS, main ingredient is chromic acid	8
85	5 gal	poly	unknown			
86	5 gal	poly	Electroless nickel			
87	5 gal	poly	copper plating agent			
88	5 gal	poly	solderon acid		According to Rohm & Haas' website, main ingredient is sulfonic acid and pH <1	
89	5 gal	poly	unknown			
90	5 gal	poly	unknown			
91	5 gal	poly	unknown			
92	5 gal	poly bucket	Citrasure			

#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
93	5 gal	poly bucket	Citasure			
94	5 gal	poly bucket	Citasure			
95	5 gal	poly bucket	Citasure			
96	5 gal	poly	Lumachrome conversion			
97	5 gal	poly	Lumachrome conversion			
98	5 gal	poly bucket	unknown			
99	10 gal	fiber	Alprep 291B	oxidizer	leaking	12
100	5 gal	poly	unknown			
101	5 gal	poly	copper plating agent			
102	5 gal	poly	copper plating agent			
103		bag	sodium persulfate	oxidizer, corrosive, incompatible with water	MSDS says to manage as a hazardous waste.	
104	55 gal	poly	sodium hydroxide	corrosive; incompatible with oxidizers; mixing with water causes a large amount of heat generation	New product	28
105	55 gal	poly	sodium hydroxide		New product	28
106	55 gal	poly	sodium hydroxide		New product	28
107	55 gal	poly	sodium hydroxide		New product	28
108	55 gal	poly	unknown			28
109	55 gal	poly	sodium hypochlorite	Incompatible with ammonium salts (Containers 14 and 15), methanol, and acids	New product	28
110	55 gal	poly	sodium hypochlorite		New product	28
111	55 gal	poly	sodium hypochlorite		New product	28
112	55 gal	poly	sodium hypochlorite		New product	28
113	220 gal	poly tote	zincate solution	corrosive	Labeled "Hazardous Waste" and dated 7/16/08	28
114	220 gal	poly tote	zincate solution	corrosive	Labeled "Hazardous Waste" and dated 7/16/08	28
115	220 gal	poly tote	sulfuric acid and water	corrosive; incompatible with water, potassium permanganate (Container #185)		28
116	220 gal	poly tote	silver cyanide	toxic	Labeled "Hazardous Waste" and dated 7/17/08	28
117	220 gal	poly tote	silver cyanide	toxic	Labeled "Hazardous Waste" and dated 7/17/08	28
118	220 gal	poly tote	unknown green liquid			28

#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
119	220 gal	poly tote	unknown orange liquid			28
120	220 gal	poly tote	nickel plating bath			28
121	220 gal	poly tote	nickel plating bath			28
122	30 gal	poly	hydrogen peroxide (35%)	corrosive, oxidizer; incompatible with acids, metals, hexavalent chromium compounds, and cyanides; explosive when mixed with potassium permanganate or alcohols		
123	15 gal	poly	unknown	corrosive	open	19
124	15 gal	poly	unknown			
125	55 gal	poly	Isoprep 172	corrosive	potassium hydroxide (30-35%); appeared to be leaking on top	20
126	55 gal	poly	Electroless nickel			
127	55 gal	metal	Rust Veto	flammable; incompatible with strong oxidizers	According to MSDS, meets D001 and D005 (barium) hazardous waste codes	
128	55 gal	poly	Electroless nickel			
129	55 gal	poly	unknown - can't get to			
130	55 gal	poly	Electroless nickel			
131	55 gal	poly	unknown - can't get to			
132	55 gal	poly	Electroless nickel			
133	55 gal	poly	unknown - can't get to			
134	55 gal	poly	unknown - can't get to			
135	55 gal	poly	unknown - can't get to			
136	55 gal	poly	unknown - can't get to			
137	55 gal	poly	unknown - can't get to			
138	55 gal	poly	unknown - can't get to			
139	55 gal	poly	unknown - can't get to			
140	55 gal	poly	unknown - can't get to			
141	55 gal	poly	unknown - can't get to			
142	55 gal	poly	unknown - can't get to			
143	55 gal	poly	unknown - can't get to			
144	55 gal	poly	unknown - can't get to			
145	55 gal	poly	unknown - can't get to			

#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
146	55 gal	poly	unknown - can't get to			
147	55 gal	poly	unknown - can't get to			
148	55 gal	poly	unknown - can't get to			
149	55 gal	poly	unknown - can't get to			
150	55 gal	poly	unknown - can't get to			
151	55 gal	poly	unknown - can't get to			
152	55 gal	poly	unknown - can't get to			
153	55 gal	poly	unknown - can't get to			
154	~30 lb	bag	sodium bicarbonate			21,22
155	5 gal	poly	unknown - illegible label			21,22
156	5 gal	poly	unknown - illegible label			21,22
157	5 gal	poly	unknown - illegible label			21,22
158	5 gal	poly	unknown - illegible label			21,22
159	5 gal	poly	unknown - can't get to			21,22
160	5 gal	poly	unknown - can't get to			21,22
161	5 gal	poly	unknown - can't get to			21,22
162	5 gal	poly	unknown - can't get to			21,22
163	5 gal	poly	unknown - can't get to			21,22
164	5 gal	poly	unknown - can't get to			21,22
165	5 gal	poly	unknown - can't get to			21,22
166	5 gal	poly	unknown - can't get to			21,22
167	55 gal	poly	unknown - can't get to			21,22
168	55 gal	poly	unknown - can't get to			21,22
169	55 gal	poly	unknown - can't get to			21,22
170	55 gal	poly	unknown - can't get to			21,22
171	55 gal	poly	unknown - can't get to			21,22
172	55 gal	poly	unknown - can't get to			21,22
173	55 gal	poly	unknown - can't get to			21,22
174	55 gal	poly	unknown - can't get to			21,22
175	55 gal	poly	unknown - can't get to			21,22
176	55 gal	poly	unknown - can't get to			21,22

#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
177	55 gal	poly	unknown - can't get to			21,22
178	15 gal	poly	glacial acetic acid			
179	15 gal	poly	glacial acetic acid			
180	15 gal	poly	phosphoric acid			
181	15 gal	poly	Electropure			
182	15 gal	poly	Electropure			
183	5 gal	poly	Metex add agent	corrosive, toxic		
184	5 gal	poly	gluconic acid			
185	5 gal	poly	potassium permanganate			
186	55 gal	poly	unknown		yellow-greenish liquid on lid	23
187	55 gal	poly/metal	unknown - can't get to			038
188	55 gal	poly/metal	unknown - can't get to			038
189	55 gal	poly/metal	unknown - can't get to			038
190	55 gal	poly/metal	unknown - can't get to			038
191	30 gal	poly	zinc chloride	corrosive		038
192	25 lb	poly bag	ammonium bifluoride	Incompatible with acids and alkalis		24
193	55 gal	poly/metal	unknown - can't get to			27
194	55 gal	poly/metal	unknown - can't get to			27
195	55 gal	poly/metal	unknown - can't get to			27
196	55 gal	poly/metal	unknown - can't get to			27
197	55 gal	poly/metal	unknown - can't get to			27
198	55 gal	poly/metal	unknown - can't get to			27
199	55 gal	poly	Metex SCB Nickel Stripper			27
200	55 gal	poly	unknown - can't get to			27
201	5 gal	poly	Macdermid Clepo Bondal			27
202	55 gal	poly	unknown - can't get to			27
203	55 gal	poly	unknown - can't get to			27
204	55 gal	poly	unknown - can't get to			27
205	55 gal	poly	unknown - can't get to			27
206	55 gal	poly	unknown - can't get to			27
207	5 gal	fiber	Stannous sulfate	None		25

#	Container Size	Container Material	Contents	Hazards	Comments	Photograph #
208	55 gal	metal	unknown - no label			26
209	55 gal	metal	unknown - no label			26
210	55 gal	poly	unknown			26
211	55 gal	poly	unknown - can't get to			26
212	55 gal	poly	unknown - can't get to			26
213	55 gal	poly	unknown			26
214	55 gal	poly	unknown - can't get to			26
215	55 gal	poly	unknown - can't get to			26
216	300 gal	poly tank	nitric acid			18

ATTACHMENT #2

- LABORATORY DATA FOR pH



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

ENVIRONMENTAL
LABORATORY SECTION

PHONE: (302) 739-9942
FAX: (302) 739-3491

August 25, 2008

Melissa Ferree
Solid and Hazardous Waste Management Branch
Division of Air and Waste Management
89 Kings Highway
Dover, DE 19901

Attention: Melissa Ferree

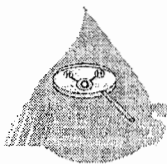
Attached you will find the following Laboratory Results:

Order Number:	0808060
Project Description:	Procino Plating
Date Received:	08/20/2008
Time Received:	14:15

If you have any questions regarding this data, please contact me at the above telephone number.

Sincerely,

Kathy A. Knowles
Laboratory Manager



ANALYSIS REPORT

ELS Sample Number: 0808060-001

Client Sample Description: PP1

Site ID:

Matrix:

Liquid Waste

Sampling Method:

Grab

Date and Time Collected:

8/20/2008 11:07

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.70	pH units			08/20/2008

ANALYSIS REPORT

ELS Sample Number: 0808060-002

Client Sample Description: PP2

Site ID:

Matrix:

Liquid Waste

Sampling Method:

Grab

Date and Time Collected:

8/20/2008 11:09

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.41	pH units			08/20/2008

ANALYSIS REPORT

ELS Sample Number: 0808060-003

Client Sample Description: PP3

Site ID:

Matrix:

Liquid Waste

Sampling Method:

Grab

Date and Time Collected:

8/20/2008 11:11

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.33	pH units			08/20/2008

ANALYSIS REPORT

ELS Sample Number: 0808060-004

Client Sample Description: PP4

Site ID:

Matrix:

Liquid Waste

Sampling Method:

Grab

Date and Time Collected:

8/20/2008 11:13

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.86	pH units			08/20/2008

ANALYSIS REPORT

ELS Sample Number: 0808060-005

Client Sample Description: PP5

Site ID:

Matrix:

Liquid Waste

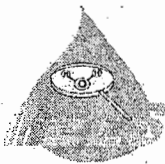
Sampling Method:

Grab

Date and Time Collected:

8/20/2008 11:15

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.20	pH units			08/20/2008



ANALYSIS REPORT

ELS Sample Number: 0808060-001

Client Sample Description: PP1

Site ID:

Matrix:

Sampling Method:

Date and Time Collected:

Liquid Waste

Grab

8/20/2008 11:07

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.70	pH units			08/20/2008

ANALYSIS REPORT

ELS Sample Number: 0808060-002

Client Sample Description: PP2

Site ID:

Matrix:

Sampling Method:

Date and Time Collected:

Liquid Waste

Grab

8/20/2008 11:09

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.41	pH units			08/20/2008

ANALYSIS REPORT

ELS Sample Number: 0808060-003

Client Sample Description: PP3

Site ID:

Matrix:

Sampling Method:

Date and Time Collected:

Liquid Waste

Grab

8/20/2008 11:11

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.33	pH units			08/20/2008

ANALYSIS REPORT

ELS Sample Number: 0808060-004

Client Sample Description: PP4

Site ID:

Matrix:

Sampling Method:

Date and Time Collected:

Liquid Waste

Grab

8/20/2008 11:13

Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.86	pH units			08/20/2008

ANALYSIS REPORT

ELS Sample Number: 0808060-005

Client Sample Description: PP5

Site ID:

Matrix:

Sampling Method:

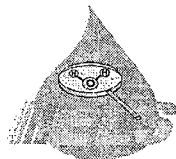
Date and Time Collected:

Liquid Waste

Grab

8/20/2008 11:15

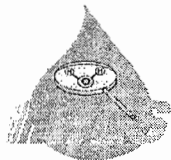
Test Parameter	Method	Result	Units	Qualifier	LOQ	Analysis Date
Inorganic Nonmetallic Constituents						
pH	USEPA 9040-C	0.20	pH units			08/20/2008



Qualifier Codes, Definitions, and Abbreviations

Qualifier/Flag

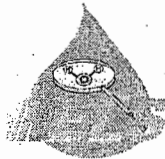
<	Sample value is below the method detection limit. The result is reported as < MDL.
>	Sample value is above the upper quantitation limit. The upper quantitation limit is reported.
AB	Air Bubble in DO bottle
B	Compound not detected substantially (10 times) above the level reported in the laboratory blanks (For Chlorophyll & Pheophytin, blank value is at or below amount detected in sample).
BT	Secchi disk ON BOTTOM. The reported result is the depth from the surface to the bottom.
C	See report narrative or comment line for observations concerning this result.
D	Sample diluted for analysis.
EG	Value exceeds a theoretically equivalent or greater value (e.g. dissolved > total).
EW	Value exceeds a theoretically equal or greater value (e.g. dissolved > total). However, the difference is within the expected precision of the analytical techniques and is not statistically significant.
FZ	Samples frozen prior to analysis
I	The reported value is estimated due to the presence of interference.
IM	Instrument malfunctioned; No measurement taken.
J	Analyte present; reported value is estimated; concentration is below the range for accurate quantitation (greater than the MDL, but less than the LOQ).
JV	Analysis performed after holding time expired.
JH	Result is likely overestimated due to matrix effect.
JL	Result is likely underestimated due to matrix effect.
K	Sample not analyzed for the dissolved metal. The Total metal result is below the lower quantitation limit.
LOQ	Limit of Quantitation
MDL	Method Detection Limit
NA	Not Analyzed but required by project workplan or analytical request form.
NBF	No bottom measurement recorded in the field due to shallow water; Bottom records are those measurements recorded at surface.
NC	Sample not collected, but required by the project work plan.
ND	Not Detected.
NE	Field measurement not taken due to uncontrollable field sampling event or Natural Condition (Depth of water too deep/shallow).
NF	Sample collected, but not analyzed by the laboratory due to field error.
NO	None Observed
NR	No Result. See report narrative or comments for explanation.
NV#	Analytical result not valid.
O	Sample outsourced for analysis. Data will be reported separately.
P	Sample not properly preserved in field in accordance with preservation requirements. Data may be suspect.
PMM	Par Meter Malfunction
QC	Quality control value is outside acceptance limits.
QNS	Quantity not sufficient. Not enough sample to perform requested analyses.
S	Results will be reported in a separate report; See attached report.
SD	Sample discarded; Sample collected but not analyzed as per client request.
SNF	Site has no flow (i.e. a dry stream or a stream with no velocity)
STD	Stream too deep
STS	Site is too shallow to sample
U	Compound was analyzed but not detected. The method detection limit is reported.
UR	Nothing unusual was noted during the analysis of this sample. However, the test result differs from the norm to an extent that the laboratory considers it unreliable.
USGS	Site has no flow (i.e. a dry stream or a stream with no velocity)
V	Analysis performed after holding time expired.
X	Results were not available at the time of the release of the report. Results will be reported when available.



Qualifier Codes, Definitions, and Abbreviations

Units

CFS	Cubic Feet per Second.
cfu/100mL	Colony forming units per 100 mL.
G	gram; there are 1000 g in 1 Kg.
GPM	Gallons per minute.
IN	Inches.
Kg	Kilogram.
L	Liter.
mg	milligram; there are 1000 mg in 1 g.
MGD	Millions of Gallons per Day.
ml	milliliter; there are 1000 ml in 1 L.
mpn/100mL	most probable number per 100 mL.
NTU	Nephelometric Turbidity Units. NTU is numerically equivalent to Formazin turbidity unit (FTU).
oC	Celsius.
pCi/L	Pico curie per liter.
ppb	Parts per billion=ug/Kg, ug/L.
ppm	Parts per million=mg/Kg, ug/g, mg/L, ug/ml; 1 ppm=1000 ppb.
su	Standard Units.
ug	microgram; there are 1000 ug in 1 mg.
uL	microliter; there are 1000 ul in 1 ml.
uMhos	Conductivity units for laboratory measurements.
uS	micro siemens; units used to measure conductivity in the field; same as uMhos.



Qualifier Codes, Definitions, and Abbreviations

Units

CFS	Cubic Feet per Second.
cfu/100mL	Colony forming units per 100 mL.
G	gram; there are 1000 g in 1 Kg.
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IN	Inches.
Kg	Kilogram.
L	Liter.
mg	milligram; there are 1000 mg in 1 g.
MGD	Millions of Gallons per Day.
ml	milliliter; there are 1000 ml in 1 L.
mpn/100mL	most probable number per 100 mL.
NTU	Nephelometric Turbidity Units. NTU is numerically equivalent to Formazin turbidity unit (FTU).
oC	Celsius.
pCi/L	Pico curie per liter.
ppb	Parts per billion=ug/Kg, ug/L.
ppm	Parts per million=mg/Kg, ug/g, mg/L, ug/ml; 1 ppm=1000 ppb.
su	Standard Units.
ug	microgram; there are 1000 ug in 1 mg.
uL	microliter; there are 1000 ul in 1 mL.
uMhos	Conductivity units for laboratory measurements.
uS	micro siemens; units used to measure conductivity in the field; same as uMhos.

FIELD CHAIN OF CUSTODY

(Complete in BLUE ink)

Page 1 of 1



Client : DNREC - SHWMB
Address : 89 Kings Highway
Dover, DE 19901
Phone No.: (302) 739-9444

Report To : Melissa Ferree
Invoice To : DNREC - SHWMB
Account :
ELS Order ID : 0808060

PROJECT NAME							No. Of Containers	ANALYSES								REMARKS
SAMPLERS (Please Print)								H								
(ELS Use Only) Lab Log No.	Client Sample Description	Sample Date	Sample Time	Matrix	Comp	Grab										
0808060-001	PP1	8/20/08	11:07am	LW		X	1	X								
0808060-002	PP2	8/20/08	11:09a	LW		X	1	X								
0808060-003	PP3	8/20/08	11:11a	LW		X	1	X								
0808060-004	PP4	8/20/08	11:13a	LW		X	1	X								
0808060-005	PP5	8/20/08	11:15a	LW		X	1	X								
RELINQUISHED BY: (signature)		DATE		TIME		RECEIVED BY: (signature)										
<u>Melissa Ferree</u>		<u>8/20/08</u>		<u>1415</u>		<u>Beneed L Heinen</u>										
COMMENTS:																
							DW - drinking water SL - sludge ER - equip. rinseate SO - soil GW - ground water SW - surface water Lab - lab water TI - tissue LW - liquid waste WS - solid waste SE - sediment WW - waste water									
							Is laboratory chain-of-custody required? <input checked="" type="radio"/> Yes / <input type="radio"/> No									

ELS USE ONLY

Sample Conditions (circle response):

1. Samples match COC? ☒ Yes / ☐ No 2. Bottles supplied by ELS? ☒ Yes / ☐ No 3. Samples received broken/leaking? ☒ Yes / ☐ No 4. Cooler temp bottle 2-6 degrees? ☒ Yes / ☐ No / ☐ NA
5. Properly preserved? ☒ Yes / ☐ No 6. VOA/DO containers free of headspace? ☒ Yes / ☐ No / ☐ NA 7. Holding times expired? ☒ Yes / ☐ No 8. Volume sufficient for analysis? ☒ Yes / ☐ No